BLADEN LIBRARY SCARBOROUGH
3 1761 02928 8909

# MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

# MIND

## A QUARTERLY REVIEW

OF

## PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

G. F. STOUT,

WITH THE CO-OPERATION OF PROFESSOR H. SIDGWICK, PROFESSOR W. WALLACE, DR VENN, DR WARD, AND PROFESSOR E. B. TITCHENER.

---

NEW SERIES, VOL. IV.—1895.

---

Reprinted by permission of
THOMAS NELSON AND SONS LTD. EDINBURGH
KRAUS REPRINT LTD.
Vaduz
1964

Printed in Germany
Lessing-Druckerei Wiesbaden

SCARBOROUGH
COLLEGE
LIBRARY

# CONTENTS OF VOL. IV., N.S.

## ARTICLES.


| | PAGE |
|---|---|
| Bradley, F. H.—What do we mean by the Intensity of Psychical States? | 1 |
| „ On the supposed Uselessness of the Soul | 176 |
| „ In what sense are Psychical States extended? | 225 |
| Carlile, W.—Reality and Causation (I.) | 82 |
| „ „ „ (II.) | 213 |
| Dixon, E. T.—On the Relation of Accommodation and Convergence to our Sense of Depth | 195 |
| Foston, H. M.—Organic Evolution and Mental Elaboration | 472 |
| Gupta, S. N.—Nature of Inference in Hindu Logic | 159 |
| Hardie, R. P.—The *Poetics* of Aristotle | 350 |
| Mackenzie, J. S.—Notes on the Theory of Value | 425 |
| Marshall, H. R.—Emotions *versus* Pleasure-Pain | 180 |
| McIntyre, J. L.—Time and the Succession of Events | 334 |
| Montgomery, E.—The Integration of Mind | 307 |
| Schiller, F. C. S.—The Metaphysics of the Time-Process | 36 |
| Shand, A. F.—Attention and Will: A Study in Involuntary Action | 450 |
| Sidgwick, A.—Context and Meaning | 281 |
| Sidgwick, H.—The Philosophy of Common Sense | 145 |
| Smith, W.—Knowledge | 489 |
| Smith, W. G.—The Relation of Attention to Memory | 47 |
| Stokes, G. J.—Gnosticism and Modern Pantheism | 320 |
| Titchener, E. B.—Simple Reactions | 74 |
| Wallaschek, R.—On the difference of Time and Rhythm in Music | 28 |


## DISCUSSIONS.


| | |
|---|---|
| Bryant, Sophie.—Antipathy and Sympathy | 365 |
| Dixon, E. T.—On the difference of Time and Rhythm in Music | 236 |
| Irons, D.—The Physical Basis of Emotion. A Reply | 92 |
| Sidgwick, H.—Theory and Practice | 370 |
| Titchener, E. B.—The Type-Theory of the Simple Reaction | 506 |
| Whittaker, T.—The Theory of Justice | 99 |

## CRITICAL NOTICES.

PAGE

ADAM, J.—L. Dugas, *L'Amitié Antique d'après les moeurs populaires et les théories des philosophes* . . . . . 533
BOSANQUET, B.—Dr C. Sigwart, *Logic* . . . . . 388
BROUGH, J.—Rev. H. Hughes, *The Theory of Inference* . . 113
CURTIS, M. M.—Max Heinze, *Vorlesungen Kants über Metaphysik aus drei Semestern* . . . . . 118
EDITOR.—O. Külpe, *Einleitung in die Philosophie* . . . . 537
JOHNSON, W. E.—J. N. Keynes, *Studies and Exercises in Formal Logic* . . . . . 240
JONES, E. E. C.—J. Seth, *A Study of Ethical Principles* . . 252
MACKENZIE, J. S.—W. Wallace (edited by), *Hegel's Philosophy of Mind* . . . . . 103
„ Dr A. Riehl, *Introduction to the Theory of Science and Metaphysics* . . . . . 249
POLLOCK, F.—A. J. Balfour, *The Foundations of Belief* . . 376
RIVERS, W. H. R.—H. Maudsley, *The Pathology of Mind*, E. Kraepelin, *Psychologische Arbeiten* . . . . . 400
RUSSELL, B.—Dr G. Heymans, *Die Gesetze und Elemente des wissenschaftlichen Denkens* . . . . . 245
SETH, A.—H. Jones, *The Philosophy of Lotze* . . . . . 515
SIDGWICK, H.—D. G. Ritchie, *Natural Rights* . . . . . 384
SMITH, W. G.—H. Nichols, *Our Notions of Number and Space* . 392
TITCHENER, E. B.—G. T. Ladd, *Psychology, Descriptive and Explanatory* . . . . . 109
„ G. T. Ladd, *Philosophy of Mind* . . . . . 396

---

## NEW BOOKS.

Allier, R.—*La philosophie d'Ernest Renan* . . . . . 549
Apel, M.—*Kants Erkenntnistheorie und seine Stellung zur Metaphysik: eine Einführung in das Studium von Kants Kritik der reinen Vernunft* . . . . . 551
Arréat, L.—*Mémoire et Imagination (peintres, musiciens, poètes, orateurs)* . . . . . 126
Beaunis, H. and Binet, A. (publiée par).—*L'année psychologique.* Première année, 1894 . . . . . 550
Bosanquet, B.—*The Essentials of Logic* . . . . . 542
Boutroux, E.—*De l'idée de Loi naturelle* . . . . . 412
Brandt, F. B.—*Friedrich Eduard Beneke: The Man and his Philosophy* . . . . . 547
Busse, L.—*Philosophie und Erkenntnistheorie* . . . . . 413
Deussen, P.—*The Elements of Metaphysics: Being a Guide for Lectures and Private Use.* (Translated from the Second German Edition by C. M. Duff) . . . . . 544

PAGE

Donisthorpe, W.—*Law in a Free State* . . . . . 546
Douglas, C.—*John Stuart Mill: A Study of his Philosophy* . 409
Dumas, G.—*Les états intellectuels dans la Mélancolie* . . . 127
Dunan, C.—*Théorie psychologique de l'Espace* . . . . . 263
Elsenhans, T.—*Wesen und Entstehung des Gewissens: eine Psychologie der Ethik* . . . . . 131
Engel, G.—*Entwurf einer ontologischen Begründung des Seinsollenden* . . . . . 267
Flatau, E.—*Atlas of the Human Brain.* (Translated by W. Nathan and J. H. Carslaw) . . . . . 410
Fouillée, A.—*Pages choisies de J. M.-Guyau* . . . . . 264
Fullerton, G. S. (translated and edited by).—*The Philosophy of Spinoza as contained in the First, Second, and Fifth Parts of the "Ethics," and in Extracts from the Third and Fourth* 259
Greef, G. De.—*Le Transformisme social* . . . . . 261
Greenwood, F.—*Imagination in Dreams, and their Study* . . 260
Griffing, H.—*On Sensations from Pressure and Impact: With Special Reference to the Intensity, Area, and Time of Stimulation.* (Psychological Review; Monograph Supplement, I. Feb. 1895.) . . . . . 407
Haeckel, E.—*Monism as connecting Religion and Science: The Confession of Faith of a Man of Science* . . . . . 257
Heymans, G.—*Die Gesetze und Elemente des wissenschaftlichen Denkens.* Bd. II., *Theorie des naturwissenchaftlichen Denkens* . . . . . 131
Izoulet, J.—*La cité moderne. Métaphysique de la Sociologie* . 262
Jerusalem, W.—*Die Urtheilsfunction: eine psychologische und erkenntniskritische Untersuchung* . . . . . 553
Jowett, B. and Campbell, L. (edited by).—*Plato's Republic* . . 258
Lefèvre, G.—*Obligation morale et idéalisme* . . . . . 547
Lehmann, R.—*Schopenhauer: ein Beitrag zur Psychologie der Metaphysik* . . . . . 131
Leimbach, K. A.—*Untersuchungen über die verschiedenen Moralsysteme* . . . . . 130
Lombroso, C. and Ferrero, W.—*The Female Offender* . . . 404
Mach, E.—*Popular Science Lectures.* (Translated by T. J. McCormack) . . . . . 261
Marshall, H. R.—*Aesthetic Principles* . . . . . 406
Martin, F.—*La perception extérieure et la science positive* . . 126
Martinak, E.—*Die Logik John Lockes* . . . . . 264
Meinong, A.—*Psychologisch-ethische Untersuchungen zur Werth-Theorie* . . . . . 267
Meyer, E.—*Humes und Berkeleys Philosophie der Mathematik* . 266
Morgan, C. L.—*An Introduction to Comparative Psychology* . . 124

PAGE

Morgan, C. L.—*Psychology for Teachers* . . . . . 258
Nichols, H.—*Our Notions of Number and Space* . . . . 124
Nordau, M.—*Degeneration.* (Translated from the Second Edition of the German work) . . . . . 545
Novicow, J.—*Les gaspillages des Sociétés modernes* . . . 125
Pillon, F. (publiée sous la direction de).—*L'Année philosophique.* Cinquième Année, 1894 . . . . . 410
Pilo, M.—*La psychologie du Beau et de l'Art.* (Traduit de l'Italien par A. Dietrich) . . . . . 411
Pioger, J.—*La vie sociale, la morale et le progrès: Essai de conception expérimentale* . . . . . 126
Podmore, F.—*Apparitions and Thought Transference: An Examination of the Evidence for Telepathy* . . . . . 123
Queyrat, F.—*L'Abstraction et son rôle dans l'éducation intellectuelle* 127
Rehmke, J.—*Lehrbuch der allgemeinen Psychologie* . . . 133
Reicke, R. (mitgetheilt von).—*Lose Blätter aus Kants Nachlass* . 414
Ribot, T.—*The Diseases of Personality.* (Authorised Translation, Second Edition) . . . . . 547
Sigwart, C.—*Logic* (Second Edition, Translated by H. Dendy) . 261
Steiner, R.—*Die Philosophie der Freiheit: Grundzüge einer modernen Weltanschauung* . . . . . 129
Tarde, G.—*La logique sociale* . . . . . 128
Veitch, J.—*Dualism and Monism, and other Essays* . . . 410
Venn, J.—*Symbolic Logic* (Second Edition) . . . . . 260
Vignoli, T.—*Peregrinazioni psicologiche* . . . . . 133
Watson, J.—*Comte, Mill and Spencer* . . . . . 259
Wetterhan, D.—*Das Verhältnis der Philosophie zu der empirischen Wissenschaft von der Natur* . . . . . 267
White, W. H. and Stirling, A. H. (translated by).—*Ethic of Benedict de Spinoza* (Second Edition) . . . . . 259
Wundt, W.—*Lectures on Human and Animal Psychology.* (Translated from the Second German Edition by J. E. Creighton and E. B. Titchener) . . . . . 125
Zwaardemaker, H.—*Die Physiologie des Geruchs* . . . . 552

---

## NOTES AND NEWS.

Carroll, L.—What the Tortoise said to Achilles . . . 278
Johnson, W. E.—Hypotheticals in a Context . . . . 143
Sidgwick, A. „ „ „ „ „ . . . . 143
Notice of L'année psychologique . . . . . 144

PHILOSOPHICAL PERIODICALS . . . 135, 270, 416, 555

New Series. No. 13.] [January, 1895.

# MIND

## A QUARTERLY REVIEW

OF

## PSYCHOLOGY AND PHILOSOPHY.

### I.—WHAT DO WE MEAN BY THE INTENSITY OF PSYCHICAL STATES?

By F. H. Bradley.

In this paper I have no special conclusion to advocate, nor, so far as practice goes, do I know what conclusion it suggests. I have found the intensity of psychical states a most ambiguous term, and I have seen no discussion of its sense which has satisfied my mind. And my aim in these pages is to endeavour to reopen the subject. I will attempt first to remove what seem to myself to be some errors and prejudices, and I will then go on to enquire into the meaning of psychical strength.

We may begin with the question whether psychical states are at all comparable in quantity. This has been denied, and psychical states, it has been said, are by their essence not measurable. It is not merely that in practice *we* cannot measure them, it is not merely that we cannot find and state their amounts in common units, but the contention is that in principle they have not degree and in principle do not admit of comparison in quantity. Now this denial to my mind seems based on confusion, and I will try to show that it is not tenable.

It seems evident generally that everything which exists has a quantitative side, but I am not going here to do more than notice this in passing. And the admitted fact that, rightly or wrongly, we do ascribe degree to psychical states, and speak of one toothache and one flash of light as felt to be more than another, I will at present also pass by. But I will meet the denial that mental states are in principle measurable by

the question, If so, then what is measurable? If, that is, you cannot compare anything psychical in quantity, is there anything left which could possibly be compared at all? And when this question is faced it surely admits of but one answer. Either you compare what is not psychical, and such a process seems meaningless, or else the psychical must *somehow* admit degrees in quantity. But, if so, the point to be discussed is merely the "how".

And this possibly may be all that was meant by the denial of quantity. Our perceptions are psychical states and, whatever else outer things are, we seem to know them only by and in our perceptions. But certain aspects of the perceived both persist and recur and have a special nature. Time and space, in other words, are content of a sort which admits of measurement in quantity, though the perceptions themselves as wholes (it is urged) are not measurable. For, when we measure, it is not the perceptions which are compared but only their aspects, and only the aspects of space and also of time[1]. Yes, I reply, but, if this is all you meant, the ground has been changed. For you first denied wholly that psychical states are comparable in quantity. But you now agree that they may possess aspects which are so compared, and all that you deny is that *otherwise and in other respects* they can have comparable quantity. And with this clearly you have deserted your abstract principle. Clearly you have allowed that psychical states may in principle be measured, and your addition "but only some states and merely in one respect and not in any other", whether it is true or false, is merely an affair of detail. The principle at all events has been abandoned.

Then do you admit, I may be asked, that psychical states *as wholes* are not commensurable? But *as wholes*, I would reply, are they comparable at all? Or rather let us attempt to find out what we mean. In order to compare things—no matter whether they are psychical or not—you must compare them in some respect or not compare them at all. That seems obvious, and there is something else perhaps not less evident. Things cannot be compared at all unless they are more or less definite, unless they are taken, that is, as circumscribed groups of content. But, if so, they must be abstracted and to some

[1] While agreeing that space in the end is required for accurate measurement, I would point out a feature in time which has been sometimes overlooked. It seems possible, at least theoretically, apart from space, to compare two durations which coexist and start together, but which may differ because one goes on when the other has ceased (cf. Bosanquet, *Logic*, i. 178). This remark has however, so far as I am aware, no practical bearing.

extent *not* treated as wholes. If I am to compare two objects, let us say two stones, the stones first must be objects. But this means that they are content more or less abstracted from its sensuous setting. It means that the vague totality of the "this-now" is ideally mutilated, and that the "given" is emphatically not taken as a whole. And, if you object to this, of course all comparison is precluded. Then having so got your objects, in order to compare them, you must abstract once more. You must consider them from an identical part of their content neglecting the rest. And, if you will not do this, all comparison and measurement is impossible. Your cloth and yard-stick, for example, as wholes are incommensurable.

These remarks seem evident, and let us see how they bear on psychical states. Plainly here we want to know first what "a psychical state" means. If without abstraction it is to stand for a total "this-mine", then of course, all comparison being excluded, such a sensuous given is incomparable, and we must be careful how we venture even to call it a "psychical state". But, if you are willing to distinguish and to abstract, psychical states are at once comparable. We may regard, for instance, my whole condition viewed at two different times. Here by an abstraction we have taken two groups of content, and these groups, the same in some respect or respects, will differ in others. They may thus be compared, and, so far as abstract principle is concerned, their quantity may serve as a point of comparison. For their quantity may be one of the respects in which these groups are the same and different.

Thus psychical states, if they mean the varying conditions of my whole self, may at least in principle be compared and compared in amount. But the term "psychical state" can have a different meaning. Everything that in any sense however ideal is present in my experience may loosely be called my psychical state. For every ideal object must also have its side of psychical existence, and that distinction of content in which it consists must happen in me. I see the rose and smell its perfume, and all this content and all its synthesis is thus a fact of mine. Every element and feature in this ideal whole must modify my being, and therefore from this side it can be called my state. But I am not the rose nor am I odorous nor do I bloom. Such syntheses in their proper character and in their own internal distinctions, while you rest on these, are not my adjectives. They form part of my psychical facts only so far as you do not stand on their abstracted meaning, only so far as you do not take that except in one with its aspect of psychical event, its bearing on me. And however we formulate this distinction of existence and content, and on whatever

principle in the end we take it to rest, to neglect it is everywhere to fall into confusion[1].

"One rose measured with another may be double in size, but their two perceptions, as my states, are not comparable in quantity, and therefore psychical states are incommensurable". But in this objection psychical existence and content are confused. For the content of my perceptions is measurable, and (as we saw above) no one could otherwise measure any object. And again my two perceptions, as two additions to my present psychical being, can obviously more or less increase that in amount; and in principle therefore they each must have a quantity. And if all you mean is that the quantity perceived in and by the two ideal contents is not the same quantity which is given in the two psychical facts, that hardly proves that this second quantity is nothing and nonsense. But if again you mean that two psychical states, as two mere sensuous wholes, cannot be compared in amount, that remark surely is irrelevant. For everything taken merely as it is given is of course in a sense unique, and, as we have seen, it is then incomparable even in quality.

"But psychical states after all are not contained the one in the other, and therefore no relation of quantity is possible". But here once again there seems to be some confusion. Is a yard-stick contained in a roll of cloth? Are two donkeys contained in a horse, or so many horses in a steam-engine? Is a measure in every sense "contained" in what it measures, or are not such questions misleading? Surely in measurement one does not ask whether one given fact takes in another fact bodily. One asks, since two things have a certain same aspect, how in regard to that aspect they are related. And if the objection asserts that two perceptions, say of a foot and of a yard, are in respect of their content not identical so that the second contains the first—that is to maintain that no measurement anywhere exists. But if it is meant that these two perceptions, as two psychical facts, do not add to my existence, and that my existence is incapable of more and of less—that once more surely would be preposterous. And hence from both these separate aspects it seems quite clear that my perceptions have quantity. And to urge that these two respects are two, and not the same, would be irrelevant. They are not the same, but for all that they both are present, and on their connection I shall have something to say hereafter. In the same way we might also speak of the relative breadths or thicknesses

[1] While insisting on the vital importance of this distinction, I should perhaps long ago have warned the reader that it should not be credited to me.

of a yard-stick and a yard of cloth, or of their relative degrees of weight or tenacity, or odorousness or brightness. And what should we reply to an argument that, because their smells did not contain the same linear units, the smells therefore were not contained the one in the other, and could therefore have no degrees of odorousness at all? Should we not answer, Certainly I do not yet know how to measure these degrees, but you certainly have given me no cause to doubt their existence? Two perceptions of space in respect of that one common content, we agree, are measurable. Does it follow that these perceptions can be quantitatively compared in no other respect at all? Even if that conclusion is true it is true merely as a matter of fact, and it cannot be deduced from any abstract principle.

"But no", I may be told, "for extensive quantities are in principle all that is measurable, while psychical states by their essence are (some or all) merely intensive. And the intensive is either not comparable in quantity at all, or is so only by concomitance with another scale the distinctions of which are not qualitative". The whole of this objection, so far at least as it makes any appeal to principle, seems to rest upon error and false assumption. It ignores apparently or forgets doctrines which when recalled remove its basis. For there is really no such thing as quantity *merely* extensive, or as quantitative differences without quality. Because anything is qualitative, that is no reason why it should not also have quantity. And to speak of a scale of degrees which do not in any sense rest upon units, seems utterly unmeaning.

A perception of quantity involves not merely a diversity of units but a diversity which also is taken as a single integer. At least otherwise the whole meaning of quantity seems vanished. But this integral aspect must surely imply a quality. A three or four of anything, though not counted, may be a distinguishable plural whole, and, when these wholes are counted, still as wholes of units they possess each a quality. And without this qualitative side it appears impossible to see how or why we should ever have begun to count or measure. For if uncounted totals did not feel different in a certain way, and if this way did not give the feeling of more and less, I cannot imagine how a distinction and summation of units could ever have happened. Quantities are perceived first, I presume, not as being quantities at all, but as differing merely in quality. They are perceived next as also more or less of some quality or thing. They are seen next to arise and to consist in the addition of units, and to have a qualitative side which varies as these units are more and less. The commonest experience

shows us, I imagine, that groups of units feel different as wholes, and that, without counting, such felt differences are every day used in estimating quantity. And to speak of quantities as being barely extensive without any intensive aspect, and to talk of numbers as being merely discrete and not also continuous, is surely to set one-sided and false abstractions in the place of facts[1].

And what in the end are qualitative states that possess no quantity? Certainly at a low level one can perceive things as being merely Yes or No, or simply again as being "this" or "so" and as being not "that" or "thus"; but, as soon as one has advanced as far as any perception of degree, one has plainly at once both quality and quantity. So that either you must contend that no psychical states have in any sense degree—and that is to set yourself vainly against fact—or you must allow that in principle psychical states can have a quantitative aspect. For that degree means quantity becomes obvious as soon as we reflect. Wherever things are arranged in a scale so that you speak of them in that respect as being more and less, these things so far are quantitative. There is an identical element in these things, and there are diverse amounts of that element. This is what we mean if we mean anything at all by degree, and if we have no such meaning how and why do we come to speak of degree at all? In brief, the attempt to evade this conclusion must lead either to the denial of degree, or to the meaningless assertion of degrees which are not degrees of anything. Nor by bringing in the word "direction" do we succeed in avoiding this result. Certainly we have qualitative ends which we more or less approach or recede from, but we have here still an identity and difference in quantity. For if the end is a state, more or less of which we already are or possess, the conclusion is evident. And the conclusion is still certain even if the end itself has, as such, no degree. For the road towards that end or away from it contains more and less of some element, and degree consists in the varying amount of this element between our position and the end. The top of the mountain or an extreme right or left may be taken as in themselves without degree; but the road by which we reach them, a road which in some sense belongs to their being, shows units and units. And in a blended colour or taste the actual quality of the ends is already present less and more throughout the scale. In short, gradual movement in a certain direction has no sense without identity and quantity. And to take the quantity of the states as the distance "between" them would

[1] I naturally am not pretending here to deal properly with the relations of quality and quantity.

give us no help. For a scale of relative distances of course itself implies a more and less of the same something within these distances. And the qualification of the states themselves by the distances (for in fact they are so qualified), adds one difficulty the more to our unsolved problem. But if a serial perception of degrees is to be "simple" one wonders first what simple means. For if the phrase denies *separability* of aspects, that denial is merely irrelevant, while if it denies their *diversity* it is merely false. And if a perceived series of degrees is not to possess both identity and diversity, by what miracle we take it as a series our phrase does not explain.

But where there is quantity, it will be objected, there must be units many or few. In psychical states on the other hand the units cannot be given, and quantity therefore is not predicable. But, I reply first, there are no units anywhere if not in psychical states. And hence the objection can apply solely to some psychical states, or again to psychical states viewed as such or merely as my adjectives. Now these states, we may admit at once, cannot truly be called measurable, if measurement implies the statement of so many identical units. Such units exist, we may be sure, but we are not able in fact to discriminate and fix them. On the other hand their discrimination is not required for the perception of quantity, nor is it wanted for measurement, if that term is used in the widest sense. For I can tell that this sheep is larger than that sheep and a third sheep larger than the first, though I cannot say that their amounts differ as say 17, 15, and 18. And water is known by my hand to be hotter or colder, though I must fetch the thermometer to tell you how much. Yet without scales or a thermometer my perceptions have degree, and in a sense they are measurable though not precisely. For wherever I can say "more" what I really must say is "This—and" or "This and this—and"; and clearly here we have a difference in which I find the same again together with something else the same. And, if so, I must use at least my first object as an unit[1]. I am taking two things together and I find that the second is the first and also something else the same. And when I go on to consider the internal volume and plurality of both my objects, other units are employed. For I perceive that each thing repeats more or less the self-same element. And because I cannot analyse so as to make explicit any ultimate units, you cannot conclude that such underlying units are absent. Such an argument indeed would end in absurdity. It leads to the scale of perceived degrees which are

[1] Cf. here Mr Bosanquet's *Knowledge and Reality*, pp. 88—89.

degrees of nothing, and to the similar which in no respect whatever are the same, and to the numerically distinct which in no way whatever is different. And it rests on the superstition that there can be no feature or aspect of things unless we can abstract this and, so to speak, when called on produce it by itself. But we know that things are the same or different before by comparison we have found where they are identical or differ, and if our comparison fails to find this, our knowledge none the less may remain. And where psychical states are arranged in special scales we must admit units of each scale, though certainly we may be unable to produce them. And since psychical states, where disparate, can still be perceived as diverse in quantity, we must in the end assume units of psychical extent in general. We have at least so far found no argument to show that such units are impossible.

And the attempt to find a scale which is not qualitative at all is in principle irrational. For (*a*) in the first place no units can be distinct unless they differ, and this difference implies in the end a diverse quality. The "before" and the "after" in succession, for instance, are not reversible, and this difference certainly colours the successive units. And in space diversity is not thinkable as a fact apart from "right" and "left" and "over" and "under", and these differences, essential to distinct units, are surely qualitative. So that varying extents of muscular sensation apart from local qualities, except as an abstraction, appear to be meaningless[1]. And (*b*) in the second

[1] In the text I am referring to Münsterberg's doctrine, *Beiträge*, Heft III. He speaks occasionally as if muscular quantities were more and less only through different durations. But it seems clear that this is not meant, and that for the purpose in hand such a difference would not suffice. For with two sensations I should have to wait till one had ceased in order to know which is the stronger. It would, I presume, be impossible to have muscle-sensations of the same duration but differing in strength, and this, so far as I know, would be contrary to fact. So that extent (as Münsterberg seems occasionally to state) has to be considered as well as mere prolongation. But with extent must come in local differences in quality. Further, the connection of certain muscle-sensations with certain groups of other sensations seems not treated with clearness. They are connected in such a way that amongst contemporaneous groups the more and less of one feature is perceived without confusion as more and less of the other. And whether the links of these connections are physical merely or psychical also, seems a question to be raised and answered. But I am not undertaking or venturing to criticize a view which I may not have understood, and I will not even suggest that in its main result—if what that result implies were recognized and the doctrine were modified accordingly—this view is untenable or worse than unproved. A perception of more and less might everywhere, I presume, depend in some sense upon muscle-feeling. But wholly unproved on its negative side the view apparently is. For, in order to exclude all units save those of one sort,

place such total extents (as we saw above) have a qualitative side. Each is a whole which has degree and an intensive character. And the ability to count units and to measure, far from removing this feature, implies it throughout as a corresponding and integral aspect. And from another point of view muscular wholes themselves are not commensurable. For every such whole as a concrete psychical state has a particular quality. And such qualities in themselves are not comparable in quantity, nor indeed if you take each as a mere "this" are they comparable at all. In short the objections to the measurement of psychical states apply in principle also to the measurement of muscular sensations. These objections, however, we have so far seen, are founded on confusion.

But I must enter further into a point which I have noticed already. Some perceived wholes, we are informed, are mere multiples of their units, while other wholes are in no sense multiples or contain units at all. Both the assertion and the denial, I answer once more, if so stated, are mistaken. No whole even in space or time is just nothing but its units, or would be a whole at all, if, as a whole, it did not possess a quality. And on the other side, because a whole cannot be regarded as a mere sum, from this you cannot argue that it owns no quantitative aspect, does not contain any units or have any numerical value. It is not true that a difference in kind entails the absence of every corresponding difference in degree, or that this latter difference is not in principle measurable. Indeed to take for granted that no degrees are possible unless in fact we can measure them, and are able to show and specify the units involved, seems, I venture to repeat, quite arbitrary and indefensible.

On the other hand these objections enforce an important truth which we are bound to recognize. The relation between the units and the whole is in different cases extremely different, and a question is opened here with which I cannot pretend to deal satisfactorily. That the units should not differ at all in quality seems in principle to be irrational, and that the mere units *make* the whole seems in every possible case to be false.

surely it cannot possibly be enough to select and cover one part of the ground. All that I would remark on the experiments otherwise is this, that in going from one ratio to another it is not evident that the passage need be direct. For since diverse quantities and ratios have each a general character which can be learnt by experience, it seems possible that such a general impression might unconsciously serve as the intermediary. But I am very far from asserting this to have been the case. I must end with an apology for offering the remarks of one who is scarcely at all acquainted with experimental psychology in general, or specially with the controversial discussion of this point.

But the characters of various wholes must be taken as connected with their quantitative aspect in various ways and in varying degrees of directness and intimacy. Every whole has a quantity, but except in certain spheres that quantity is not its true expression. From that quantity you could never recover the quality of the whole, you cannot see *how* its character demands a certain quantity, or show how it arises from the conjunction of any units. It is otherwise with space and time, for, if we consider any portion of space, we may view this as resulting from the synthesis of certain parts. These parts, lying outside each other, can still be recognized unchanged in the whole, and as units they can be identified with other units falling outside this whole. As separated and combined in various ways these units differ, yet in one respect they all remain identical. Thus all parts of space can be regarded as integers, which each possess a quality, and yet come from and are the various multiples of identical units. And hence for us they are commensurable, and we may conclude further that only such wholes as these, if taken in and for themselves, are measurable in fact. This conclusion I think true, and I am in no way endeavouring to dissent from it. I agree that it is only where the parts lie perceptibly outside each other that the whole is able, in itself, in a proper sense to be measured.

But it is another thing to conclude that everywhere else there cannot be quantity or any units or degree, and that measurement is in principle meaningless. The perception of more or less did not begin with numeration. And where a scale, say of blueness, is observed, though the units cannot be separated and shown, it seems impossible either to deny here the presence of degree or to show that it consists in the external synthesis of spatial units. And as there were units of space before by analysis we had found them, so, I presume, there may be units elsewhere which we by no analysis can distinguish. Units may be combined in manners, I suppose, which more or less we cannot follow, and they may be connected more or less unintelligibly for us with the qualitative character of their totals. We cannot in brief deny that wholes may possess necessary numerical ratios, even when we are able neither to identify and count their units, nor to show *how* causally the quality of such wholes is connected with their quantity. Hence though it is true that only spatial (or temporal) wholes "contain" perceptibly their components, and that therefore only the spatial aspect of things can in fact be measured, that does not prove either that psychical units which are not spatial are nothing, or that everywhere else but in space and time more and less have no meaning.

In every perceived series of degrees the second member can be seen to involve the first *plus* something else of the same sort. All psychical states, apparently without exception, stand to one another as greater or less or again as equal amounts of my personal being. All psychical states therefore (it would seem to follow) must contain a certain amount of common units. It is only in spatial and temporal wholes[1] that the components fall asunder and are visible side by side. And, apart from this, measurement in the proper sense seems to be impracticable. But, apart from this, measurement does not appear in principle and in the abstract to be impossible.

Up to the present I have been engaged in the attempt to dispel prejudices which have obscured the subject. There is no such thing as quantity merely extensive, or as intensity without quantity. Degrees not resting on units in the end are meaningless. Quantity without an essential qualitative side, and a qualitative object with no quantity, are not conceivable. These are all abstractions falsely supposed to have individual existence. And it is a superstition to hold that in the soul is nothing except that which can actually be abstracted and ideally sundered. Further, we saw that psychical states can be considered in various ways. And it does not follow, because in one way they are not comparable in quantity, that they cannot in quantity be compared at all. And psychical states viewed in a certain manner we found were not comparable even in quality, and the same result holds also with those outward things which no one doubts are measured. Abstract objections of this kind possess no value, and to meet them by looking for a psychical scale which is quantitative solely, we found was the attempt to combat one superstition by means of another. Further, our inability in fact to measure does not prove the absence of all units. And you cannot argue that, because only what is extended in space or time can be counted, therefore more and less consists solely in degrees of that extension. And all psychical states, we may conclude, if not measurable in fact are at least measurable in principle.

And now, having tried to remove a mass of erroneous preconceptions, we must enter on the definition of psychical strength. I will point out first the essential ambiguity of that term; I will go on to state some of its meanings and will endeavour to explain them; and I will ask in the end what is the relation of strength, as actual amount, to psychical force,

[1] I abstain from raising the doubt whether, and how far, entirely apart from spatial perception temporal wholes would retain their character. That every kind of distinction depends on such a perception is an opinion which seems defensible, though I think it is incorrect.

and what these ideas can be taken in the end to signify. The reader must bear with me if anywhere I dwell on what seems trite and self-evident.

There is nowhere such a thing as absolute strength, but all strength is comparative and relative. Things again are not compared save in a certain respect and through a feature of their content which is the same. And "more" means more of something in which two things are at once identical and different. It is the more and less of this one feature which gives the direction and the scale of degrees, and without this the word "degree" would be simply meaningless.

Now where anything is complex and in its content has various features (and certainly all psychical states are complex), this thing may enter into various scales, and it may therefore possess at once a variety of strengths. And since its features perhaps are more or less indifferent to each other, the thing may thus alter independently its various strengths. And then degree or size, we know, is in a sense external and arbitrary, and a thing, while itself unchanged, may thus acquire an altered quantity. For the thing may enter into a different whole and a diverse scale. Thus in a foot-rule each inch, as regards that whole, would remain of the same size, though the whole rule were lessened itself to an inch or enlarged to a mile. And so the inch is (if you please) of various sizes at once. Hence, from the other side, you cannot by any change alter a thing's quantity if you, at the same time, alter correspondingly its scale; just as, while the thing itself remains unchanged, its quantity by a change of scale can be altered. These trite remarks perhaps will not seem idle when we consider their application. They show that the intensity of a psychical state may possibly be increased by the mere defect of other states. And it is utterly useless perhaps to argue the question whether attention increases intensity, until you have stated the scale which is concerned, and have asked if attention may not possibly alter that too. For the attention which doubled at once both my rule and my object, would for the purpose in hand double nothing at all. One must beware of arguments from which one would be forced to conclude that no relative size could possibly be observed under a microscope.

Let us pass on from this ambiguity to notice another. Are the intensity and the force of psychical states the same or different, and, if they differ, how is one related to the other? Now taking a "state" to mean some limited constituent of consciousness or sentience, we observe that it may seem to prevail or dominate not merely by its own strength. Accompaniments and reactions, intellectual and emotional, and in general the

connection with habits psychical and physical, seem factors here to be considered. And how far the prevalence of a state can be attributed to itself and to its own proper force, and how far such force is identical with mere intensity, becomes at once a problem. But this for the present I must quite disregard. I must provisionally abstract from pleasure and pain and every kind of reaction, and ignore for the present this question of force. I must, that is, at first confine the enquiry to the actual strength of a state when taken by itself. Let us begin then by asking what such strength can mean.

(1) My whole psychical condition at any time may be taken as a limited amount or extent, and some constituent state, say a perception, may be viewed as occupying a certain part of this area. And to this no one, I think, would object save in the interest of some theory. Now by a fiction let us take my whole condition to remain the same in amount, while the perception itself is increased and covers more of this same field of psychical existence. Such relative quantity, or more or less ground possessed by a state, we may call its varying strength. A state is strong in proportion as it is more relatively to the unchanged amount of my being. But that amount is again itself a relative quantity. For a man's mind contains more than does the mind, say, of a mouse or a butterfly, and once more no one apart from prejudice would call this in question. But, if so, we have got the idea of general psychical quantity. We have first of all an amount of myself which is taken as normal, and we have then the minds of other sentient beings compared in quantity with this and viewed as standing towards it throughout in some ratio. So that my perception, regarded as a certain fraction of my normal mind, is expressible also as, and also *is*, some fraction or perhaps some multiple of other minds. We have in other words accepted the principle of psychical units. Everything psychical is related in quantity to everything else psychical, though to specify exactly the relation may be out of our power. Any psychical fact (to put it otherwise) must contain a certain number of normal units. This is the sense of strength in which, if we pleased, we might call it absolute. And this meaning to my mind is but the expression of good sense and of everyday reason.

But psychical strength can be taken also in another and subordinate sense. The constant quantity of my whole condition was but a useful fiction, and my psychical area is obviously in itself a changing integer. My mind is full and then empty, my feelings are dull or acute, and I am active variedly or seem to sink to a mere passive residuum. So that let a perception itself keep up a uniform strength, let it contain

the same amount of any psychical area we take as average or normal, yet to me from time to time it will become less or more. Its sum of psychical units, we may say, remains identical, but since my total state contains a fluctuating number of like units, the relation of the perception to that whole must fluctuate also. Thus the ticking of a clock, forced at one time into the background and with a quantity we neglect, may at another time become the main constituent of our minds. The sensation is more to me and it is more of me because I am less, and my decrease has bestowed upon it a relative intensity. And though the perception's constant quantity independent of my change is an assumption often untrue, yet the presence of two strengths and two scales appears undeniable. My normal area and my fluctuating area are divergent amounts of psychical units, and they naturally give two different measures of strength. And however much in practice these two strengths may influence and even imply one another, it is clear that, to some extent, they are different and also diverge. Hence we have already two scales and two strengths which may vary independently.

Strength has so far been regarded as quantity of psychical existence, psychical existence measured by (*a*) a fixed, or (*b*) by a fluctuating scale. And without pausing to deal with difficulties some of which must engage us later, I will proceed to a different meaning of strength.

(2) When we speak of a sensation or perception or idea as being more or less than another, we often fail to be clear as to the scale we have in mind. But "more of what", "measured by what scale", and "relative to what whole"— if we cannot answer these questions we are speaking to some extent at hazard and blindly. Now two senses of more and less we have noticed already. A perception or idea, viewed as something which has psychical existence, we have seen can be more and less in two different ways. But beside its psychical existence a perception or idea has a reference to an object. And a more or less of some character thus referred may be what we meant when we spoke of the perception's degree. This fresh meaning of strength differs from what we had before, and it once more is able to vary independently. And this meaning itself may be developed in a number of divergent applications. I must endeavour even at some length to make this plain.

A perception or idea, even if you consider that apart from its psychical context and conditions, is never a simple piece of existence. Its character is complex, and of that complex character we use for a certain purpose some feature or features.

I am not attempting here to explain the fact of attribution, but am insisting merely on something implied in that fact. When an object is qualified it is not qualified by that whole state which we call a perception or idea. It is only one or more aspects of that state which become the adjective of our object, and the state itself may hold an indefinite amount of unapplied features. But from this follows at once an important result. The more or less of an idea or of a perception may mean the more or less merely of one aspect employed as an adjective, while, taken as a whole, the perception or idea will not vary in the same ratio. I perceive a foot and I perceive two feet, and in one aspect and character my second perception is the double of my first. It contains, we may say, twice the units *of a particular kind.* But as a mere psychical fact my second perception does not stand in that ratio. It will not on the whole contain a double amount of psychical units, but will be doubled merely with regard to one part of its area. And how that part stands to the rest will depend upon other conditions. The perception of two feet will, to speak in general, occupy more psychical area than the perception of one foot. But you cannot conclude even in general that the second psychical fact is twice the first, or that in any special case it is even greater at all. For you are using scales which are not the same, and which in part may diverge. Your increase or decrease on one scale may therefore with regard to another scale change its ratio, or it may even become indifferent wholly and quite irrelevant, or even actually be inverted.

I take in my mouth a solution with at least two flavours and of a certain temperature. Then at the next moment my perception is changed, and changed in quantity. Its warmth is doubled, or, if you please, its coolness halved. It is twice as sweet, or half as acid, as it was before. And the perception itself—is that double now or now half what it was, or is that question not, rather, ambiguous and absurd? As psychical facts the two perceptions have (we have seen) a relation in quantity, but as to that relation you can here draw no inference from your data. For the constituents of a perception may vary each in its own scale, while the whole perception keeps its quantity or varies independently. A perception certainly is more of a fact so far as it is hotter, though whether it is less of a fact so far as it is cooler seems not quite so plain. So far as it is more acid it has more psychical existence—to that I agree. But how if with more acidity goes less sweetness, and if the variations of temperature, or again of viscidity and of volume, have ratios which are more or less indifferent and independent? Surely then to ask at large about more and less, without

specifying the element and the scale or scales to which one refers, is to put oneself at the mercy of that blind fortune which does not always smile on the blind. The perception of twice anything is *to that extent* twice the perception, but the perception for all that might be decreased to say one half or one tenth. And this is not because mental states have no quantity at all. It is because they have quantity in an indefinite number of senses, and because to some extent these different scales seem independent or may even be related inversely. And where the scales generally correspond the special case is never simple, so that other conditions can affect and may even in the result destroy that correspondence. And if you answer "but this does not apply where the states are simple", I admit this readily. But I pass it by as being itself wholly without application.

These considerations gain force when we pass from perceptions to ideas. I do not mean that with ideas we find any new principle at work, but the distinction between applied content and psychical existence becomes more palpable. All content of course has psychical existence, and more of that content, we have seen, is *so far* more of psychical existence. But in an image the aspect which we consider may form so small a part of the whole image, and that aspect may also in amount be so inversely related to other aspects, that in the end no conclusion can possibly be drawn. I perceive a light and am to imagine it twice as large. But suppose that the perceived light is the noon-day sun. Must I imagine this not only increased in area but also maintaining a character in proportion to its size? And, if I cannot do this, am I prevented from thinking of it as doubled? All that is wanted surely is for a perception to be so taken in one character as in that respect to be identifiable in other contexts. And, if this is done, and if with regard to that character internal consistency is preserved, surely everything else may be taken as freely variable. The intensity of my doubled sun-image in heat and light is wholly irrelevant. Nay its actual area as measured by my perception is irrelevant also. It is the ratio of the imagined sun to an imagined sky with which I have to do, and the absolute size of my scale does not matter. My image must preserve identity with my perception or else I do not think at all, but the identity here does not consist in absolute area or intensity. The quantitative ratio therefore between the perception and its doubled image is here wholly irrelevant and may be unknown.

And when without using concrete imagery we form ideas of our sun, the same conclusion is more glaring. I am to think

rapidly of my perceived object being changed so as to be larger, brighter, redder and hotter, and let us now say not twice but, if you please, ten or a thousand times; or again let each attribute, if you please, vary diversely in increase. What happens here, I suppose, is that I possess the idea of a general or abstract scale of quantity, and that I identify a place or places on this general scale with a feature or features of my perceived sun. And where I think rapidly there seems to result no individual modified image, but a mere putting-together of two or more abstract and sundered characters. We may realize perhaps even more clearly what this means, if we imagine ourselves to think of our perceived sun's total disappearance, and then carefully reflect on what that thought must imply. But, without pausing to consider this, we perhaps may take our conclusion as made good. At the point we have reached psychical intensity can be seen not to be meaningless, but to have acquired an indefinite number of divergent meanings[1].

The result we have so far reached may be briefly resumed. (1) Everything psychical has an intensity first of psychical being. It occupies an area and contains units which are more and less in amount relatively to my passing state, or more and less measured by some fixed scale of psychical existence. And, because my passing state has a quantity which varies, these two psychical intensities partly diverge. (2) But superimposed on and parallel with these two degrees of psychical existence, we have also a variety of scales of special content. In regard to one or more of their features psychical facts are related in amount, and they give us degrees of this or that special quality, such as heat, smell or colour. Now increase of one feature means increase, so far, of psychical existence, but the ratio of increase in special quality has no fixed relation to the increase of psychical existence. Suppose, for instance, my psychical condition now is = 1000 units, and that in this total my perception of colour is = 100. Now suppose one feature of this colour-perception is = 10, what is the intensity of this feature? It is clearly one-tenth or one-hundredth as you measure it by each total. And my present state, we must not forget, is really a fluctuating amount. It contains now, let us say, 1000 standard or normal units, but it may later contain say 1200 or again say 750. Here is a new sense in which also

[1] It should now be evident that I can have an idea of psychical strength, and that I can have that idea either strongly or weakly. The aspect of a certain amount or of a certain place on the psychical scale can be given itself with varying amounts of unemployed detail and so of psychical existence.

my special perception has got intensity, and the reader, if it amuses him, may find the fractions.

Thus more and less on any special scale must mean also more and less of psychical existence, but how much more and less cannot in general be decided. And this truth in an ordinary complex case is quite irrelevant. For gain and loss within the whole psychical fact may balance each other, and the total amount may remain the same while its factors are changed. Thus a perception may in one respect be more and in another respect less, while as a psychical quantity it remains the same. And with the psychical facts called ideas, though no new principle is introduced, the multiplication and involution of divergent scales becomes more glaring. The former meanings of intensity all remain, but other scales and other meanings are superimposed on the ambiguous complex.

But in principle, I would add, this result is not sceptical. It would be sceptical if it showed that there were no scales at all, or that in themselves scales varied unworkably. And how far in practice amounts can be measured I do not enquire. But to insist that quantities all are relative to some scale, that one thing in various ways can be relative to various amounts, that, so long as in any total the internal ratios do not change, other changes may be irrelevant, and that before you ask about degree you should know first what scale is in question—such conclusions seem dictated by ordinary reason. And from another side our result is hostile to scepticism. For all psychical phenomena, it urges, can in principle be measured. They can all in principle be taken first as various amounts of existing psychical content, and then also as special amounts on diverse scales of content variously specialized. And everything psychical in the end must be taken as in principle somehow commensurable. This conclusion I will proceed to defend against several objections.

An objection may be urged first against the idea of measurable psychical existence. Quantity, it may be said, is predicable only of content made the adjective of an object, and psychical existence, whether by excess or defect, cannot possess this character. But the objection would rest on a mistake. The merely "given" taken as such, we saw above, is not comparable, but the merely "given" is not the same as psychical existence. Psychical existence implies the construction of a soul-substantive enduring in time and owning adjectives which through change preserve a basis of identity. Such an arrangement clearly transcends any deliverance of sense, since it involves the construction of a soul-object qualified by content. And of such an object quantity can in principle be predicated. And

to urge that my experience is not throughout perceived and treated as my adjective—that, when I am self-conscious, what I perceive must be less than what I am—would be irrelevant. For everything that I am, though not perceived, is in principle perceptible. In its general character and in the mass it can thus be taken as adjectival content, and can be predicated of the ideal construction which I call my existence. Nor is there anything in me which is unable so to be predicated.

In these enquiries while distinguishing we must not divide. The higher and more specified state of mind does not banish the lower. It is superimposed on, it still implies, and from one aspect it still is at the stage of the unspecified basis. Everything in experience is felt and is given first as a "this-now". Then the content of experience separates itself into groups, a "me" and a world of "not-mes", ideal objects to which all is referred as adjectival. And the same felt content, we must never forget, is used at once to qualify both the self and the not-self. There is first the feeling-green, then the sensation of something-green and of my so perceiving it. But, if these two groups and their adjective and their relation were not felt, they would not be experienced at all. And, from the other side, the feeling which precedes, and which also underlies and contains the distinction of me and not-me, can, when reflected on, be taken as the adjective of either of these objects. The history of my whole experience is an adjective which has its place in universal existence, and is also itself the private existence of my soul. And whatever advance in further distinction and ideal development takes place, the aspects both of feeling and of psychical existence still persist and are essential. But where there is existence, there also we must have more and less. And with these brief remarks I must leave the subject of psychical existence. Objections urged against it may seem subtle but will be found in the end to rest on confusion[1].

I pass from these refined doubts to dwell on the idea of psychical units. I do not contend (I may repeat) that such units can be fixed and used in practice, but in principle their existence must be assumed. Psychical states of every kind can as against one another seem more and less, a toothache, for example, can appear weaker or stronger than an exercise in logic. And if in these different things were nothing in which as amounts they were identical, and more and less of which they possessed, I do not see how they could come as members in one scale. It is here with quantity as it is with quality. If smells or if colours have no common quality, why do I treat each class as if it

[1] The question whether for psychical reaction something more than existing content must be assumed, will be touched on hereafter.

possessed it? And if the quality of all psychical states had no one common feature, how could I feel them as entering into and making up my being? To reply "then show your quality, and show your units bare" is surely irrational, for, by the hypothesis, as bare they do not exist at all. They could be shown only as abstractions, as single features specially noticed in concrete wholes, and how far in each case the abstraction is definite and useable, is of course a further question. I have two greens which are the same in green, I have a green and a red which both are colours, I have a colour and a sound which both are sensations, and I have a colour and a toothache which are both the same as being felt and as being mental states. I have two blue-greens in which the green is more and less, and two greens the same but more and less in brightness or in area, and a colour-sensation fluctuating as more and less against an invading sound, and, when the sound is removed, at once becoming more of me. There are differences specifying a lowest basis of sameness, and then these differences themselves are further specified, and as identities they underlie higher distinctions. And against this essential and all-pervasive evolution to object, "But show me the identity bare, and then I will believe" is surely blind irrelevancy. For a bare identity or difference is just that, which, if the view objected to is true, is *ipso facto* impossible. In other words an identity or a difference is by its essence relative. Thus two perceptions are related first as quantities of general psychical existence, they are related next as fractions of my present condition, they are related next as two perceptions of length, and so on indefinitely. In each respect they contain relative amounts of one common something, and these identities persist whatever more specified identities are superimposed. Thus units of psychical existence, we may admit, cannot be distinguished and fixed, but they seem open for all that to no rational doubt. Let us go on to another point.

There is an instructive, if obscure, discussion by Lotze[1] on the strength of ideas, a discussion which no German writer at least might have been expected to ignore. Into this as a whole I regret that I cannot here enter, but on one point I will comment. Ideas, Lotze seems to tell us, themselves cannot be stronger or weaker. For ideas are not what they mean, and they may signify strength but, it seems, themselves cannot possess it. Now this distinction of existence from meaning I gratefully endorse, but from the conclusion which seems based

[1] *Mik.* i. 229, *Met.* § 262. The meaning and position given to *Erregung* strike me as obscure, nor do I perceive again, how far Lotze realizes that any alteration of anything in degree is, in itself and merely so far, a certain change in quality.

on it I have to dissent. For in the being of an idea I find always psychical matter extraneous to its meaning, and this unemployed content, I must insist, can vary in quantity, while the specific meaning of the idea remains identical. And though one aspect is able to react on the other, they need neither have the same quantity nor preserve the same ratio. In something of the same way in a perception of heat volume and degree may be confused, but for all that each aspect possesses its own proper amount. Now, like every other state, an idea must have its quantity of psychical existence, measured by a normal scale, or measured also by my passing condition. Nay, we have seen above, that, in order to mean more or less, a state must, in that one aspect and merely so far, have more psychical being. And right as it is to say with Lotze, that ideas are not what they mean, it is also true that ideas can mean nothing but that which they are. For unless a thing has, and to that extent is, a quality, I cannot myself understand how it goes about to show it[1]. The idea of the extended has extension[2], the idea of the heavy has weight, the idea of the odorous has smell, and the idea of pleasure, beyond all controversy I should have thought, exists and is so far pleasant. But the specific aspect of the idea, though not destroyed, can be utterly overborne, the truth and the existence of that aspect fall in different worlds, and their intensities, though weighable and not mere shadows, are not weighed merely in one balance.

But, I may be told, you are avoiding the point of the objection. For with ideas we have relational activity, and of this activity there are no degrees. And though the product has degrees, they are not degrees of psychical strength. My desire, I reply, is not to avoid this point, but, if that be possible, to discover in what sense I am to take it. Naturally I cannot enter here into the special nature of the relational consciousness, nor ask with what meaning or what absence of meaning "activity" may be used[3]. But if I am to understand that

[1] The existence of conventional and arbitrary signs, and of mere accredited representatives, forms no valid objection. For, unless the meaning is *somehow* there and belonging to the sign, the sign would be no sign. The question is merely as to *how*, within the whole actual sign, the meaning and the existence are in each case connected—whether, that is, they are connected indirectly and through external association and credit, or directly and through an internal property. But for the purpose of the text this question of *how* the sign possesses the content it signifies, seems quite irrelevant. Here (though not everywhere) the above distinction has no importance.

[2] I hope in a future paper to return to this point.

[3] The doctrine for instance advocated by Brentano, *Psychologie*, pp. 157 foll., as to the relative intensity of Vorstellen and Vorstellung I could neither affirm nor deny. For all I know it may be plainly

relations and distinctions are not psychical facts, I answer respectfully that I find it quite otherwise. But, if they are facts, then at once I presume they have psychical existence. And if you tell me that I can have an idea or perception which contains a relational complex, and that this complex can *ad libitum* be made more complex, while its psychical existence is not thereby increased, and while the whole perception occupies no more room in my mental area—I reply that once more you seem to be in collision with palpable fact[1]. And I am curious to know the principle on which more is to happen *in* me, when it is not to happen *to* me. But if all you mean is that a whole relation is both more than its terms and also is less; if you mean that the terms, taken either without the relation, or taken again not in that aspect in which they are related, have psychical strength, and that *this* strength is irrelevant to the essential content of the relational whole—your conclusion has vanished. For you started with denying that the ideal whole has any psychical strength, and what you now deny of it is merely the psychical strength of, in short, something else. Because the strength of a related complex is not that of its unrelated factors, nor of its factors so far as they possess unrelated aspects—you assert that it possesses no strength at all. And this conclusion, false in principle, in practice collides with facts[2].

In brief, a perceived or thought relational whole must be a psychical state, and whatever other aspects and scales of quantity this perception may develope, it must through all from one side still remain a psychical state. It must be measurable, that is, in the scale of psychical existence. And with this I must pass on to another branch of the enquiry into strength.

Strength has so far been used in an arbitrary sense. I have taken it as equivalent to extent or actual area of psychical being. And a "state of mind" again has been understood arbitrarily,

tautologous or again plainly false. For I at least, until I am told, do not know what an "act" is to mean. And I must be pardoned if from time to time I repeat this, and repeat also that I am not yet ashamed of my ignorance.

[1] I am not here denying all difference between clearness and mere strength. But I am urging that increase of the first must *so far* mean increase of the second.

[2] The same principle is involved in the objection that a stronger idea or perception is a different state, that it has a different content and not the same content to a different degree. Yes, I reply, but if some part of the content is always irrelevant, the idea or perception, increased and so different with regard to that aspect, may in respect of its essential aspect remain the same. And if so, the same idea *will* have different strengths.

for I have treated it as something with an existence clearly circumscribed. But these assumptions have now to be discussed and corrected.

In a particular state of mind, say a sensation, perception or idea, what is the state itself and how much is mere accompaniment or result? Can you exclude the latter element, and, if so, where and how can you draw the line? States are, for instance, painful and pleasant, but what is here the conjunction or connection? Have we adjectives or have we accompaniments or once more mere results, and, if results, to what precisely are the results to be attributed? And a state also has irradiation physical and psychical; it spreads in itself and it spreads in its effects; and whether this spreading is to qualify the state, and, if so, how far, is a question not easily answered. But since "irradiation" is an idea perhaps not wholly clear, let us pass from it to consider what is implied in "reaction". A sensation is qualified by reaction, and how is the reaction provoked? Is it due to the mere strength of the sensation or to its quality or to both? And, when the reaction is there, in what sense does it belong to the sensation? Exclude the case of general shock, and confine your attention to special responses to a special stimulus. There is a "disposition", physical merely or psychical as well, and this latter generally at least, I presume, is acquired and has the form of a mental habit. Now if the sensation (to speak in general) has a quality which corresponds to the habit, a reaction takes place which qualifies the sensation. But what is here the sensation itself, and what are mere results? And beside the "strength" of the sensation has it got an independent "force" to produce such results?

A state, we may reply, only is that which at present it is. And what it may become or what it has become, is, so far, a different state potential or actual. But this answer, it is clear, does not dispose of the problem as to force, and even as regards the individual being of the "state" it offers no solution. For the question was as to the boundaries and limits of this being. So suppose that the state is distinguished from what it causes and becomes, yet even then can you divide it now from what it is not? For any sensation, perception or idea, is surely the product of abstraction. It is a special distinguished content which has also a psychical existence. And the difficulty is here not to distinguish merely the "what" from the "that", but rather to draw a line between the existence and its conditions, between the "that" and the "how". And this ideal partition of an undivided psychical whole is always more or less arbitrary, and it tends more and more, as you descend, to become even impracticable. For if you pass from an idea, and again from a

perceived quality referred to an object, and come down to a sensation which is merely given as a certain something—the "that" and its "how", as you descend, become steadily perplexed. And to separate at the lowest level the existence of this somewhat from its connection with my total state and from its colouring of pleasure or pain becomes in practice impossible. The individuality of a psychical fact is thus always an abstraction, it is always to some extent arbitrary, and it tends in part to become an idea which in practice is inapplicable. But within limits the use of this abstraction seems possible and legitimate.

We are however met by further troubles when we consider the relation of strength to force. For we have taken strength so far to mean extent of psychical area, the occupancy of so much ground or the possession of so many units. And this idea we found clearly to be legitimate and even necessary. But we must beware of misunderstanding, and there are cautions which I must be allowed to repeat. There is no psychical empty space in which psychical states contend. There is merely a common underlying substance or quality which all such states contain and which each further specifies. It is on the basis of this indwelling identity, and it is only by virtue of it, that states are able to struggle at all. And this quality, regarded itself as specified into a plurality and into distinctions of more and less, affords units and degrees of psychical amount. And because our whole psychical condition, taken at an average or at any one time, is a limited quantity—the ground or area occupied by a partial "state", and the units of existence which it usurps, can be thus in principle defined. Whether in practice such units can be shown, and can be used for exact measurement, is a question I pass over. But in any case I repeat and I would insist that the units and the underlying quality are merely abstractions. To regard them as capable of existence barely in their own character, and to demand their production and their exhibition naked, I must consider ridiculous. But I urge on the other side that to deny the existence of an identity when naked agrees perfectly with the assertion of its existence when clothed. Or (if you prefer the metaphor) the soul keeps no stuff not worked up into garments, but because of this to deny the sameness and the more and less of a common stuff would be quite irrational. Or the soul, we may say, can let no building-land wholly unbuilt-on. But such a condition does not exclude its power to afford an indefinite amount of area and for any kind of superstructure.

But if strength is the same as actual extent or amount of units, then strength is a narrower term than force, and it will not cover all the facts. For if a state is strong it should

dominate, it should hold its ground, it should repel and more or less extrude what attacks or even does not attack it. And, without acting thus, it must be ready, when called on, to maintain itself. Its strength in brief seems to be extension not actual only but also potential[1]. And if it maintains itself by an extraneous help, are we to call that its strength? The position of pain and pleasure, we saw above, gives rise to questions. And again a state apparently may dominate by its relation to other existing states, and also by its correspondence with "dispositions" physical and psychical. And it may even be said to dominate not merely through actual support, but by help which is indirect and even conditional. An idea, we may say, is strong when it itself is constantly suggested, and when any opposing elements, as they arise, provoke a reaction which excludes them.

We have therefore to introduce here the idea of potential energy. It is of course mythological, but its employment seems forced upon us. A state which corresponds to "dispositions" has a key which fits the wards, and so this state can unlock energy, which, being unlocked, it then harnesses to its cart, or astride of which it gets and calls this its own strength. It is perhaps well to use metaphors which confess themselves absurd, if we desire wholly to escape from domination by mere metaphor. However every man here must follow his own taste. And some writers prefer to speak of a "functional disposition" as if they knew what that was, when perhaps anyone can see that they have never faced the question. To me a "disposition" is a convenient but clearly a mythological way of stating a general fact or law, a way of psychical happening which I do not pretend to understand. When certain things physical and psychical too have happened already, then, given something else under certain conditions, a certain result will take place[2]. And in the present case this conditional result is the addition of strength, and a psychical state therefore can "have" potentially the energy which, when become actual, it appropriates.

But when this all has been admitted, our difficulty remains. For (*a*) the strength thus produced seems hardly to belong to the state itself, nor (*b*) does the state act as a stimulus by reason of its mere strength. (*a*) If a state has force to set free energy under certain conditions, the issue of this energy, we may admit, in the end is increased psychical area. Thus force is not strength, if strength means actual area or existing quantity, but force is

[1] In what follows we are on ground which is covered by the term "interest". It is in my opinion a mistake to try to limit the use of this term to denote pleasure and pain.

[2] Compare *Mind*, No. 47, p. 363.

so called only because it means potential strength, and because, given the conditions, it passes into amount of psychical units. And all so far seems tenable. But why on the other hand the state is credited with all the strength which conditionally it provokes into being, seems not intelligible. The stimulus may itself be destroyed by that explosion the outcome of which you desire to place to its credit. And if this has a sense, surely in the end that sense is arbitrary and useless. Even where the stimulus survives as an element in that increase it has provoked, even where the conditions are ascertained, and where in the whole result the stimulus is so placed that that whole is regarded as its adjective—even here to credit it beforehand with the incoming amount is an evident liberty. Even here its force will be its credit merely, and not its actual possession of existing units. And otherwise the force of a state is but the fact that conditionally it may act as a stimulus, and so conditionally produce some increase of some psychical extent. But by what right that conditional extent is to be called *its* strength is not apparent at all.

(*b*) Nor even as a stimulus does the state act by virtue of its strength. To act it must indeed possess some strength, a minimal amount that will vary with varying conditions. But its special act is certainly not the effect of this mere general strength. For we take the state to be acting not as a bare shock, but by reason of and through its special quality. And if it has the quality required, the degree of that may within limits be irrelevant. But this quality on the other hand cannot be resolved into amount of psychical units. You cannot say that the state stimulates thus or thus, simply because its strength is so much. You may by a legitimate abstraction consider that strength, that number of psychical units, without regard to any quality. But you cannot derive the qualities and their effects from a mere number of units and show them as its result. And to speak of a special arrangement or grouping of these units would be, so far as I see, to use words without a meaning. We have a general quality, and within that quality we have strengths that vary, and we have special qualities and, within each of these, we have again varying strengths. And the second set of distinctions we regard as superimposed on the first. They specify the underlying substance, and to their specific natures a certain amount of this substance in each case corresponds. But to deduce the qualities from the units of common substance, or to make an equation between these terms, seems out of the question. Given a certain quality you have somehow implied a certain quantity, but, given the same quantity, the same quality is not necessarily implied. And, if so, the force by

which a state maintains or increases its ground, will in the end diverge from the extent of its actual occupancy. And by the use of the term potential we make no real advance in understanding. For the force which potentially is strength, in the sense of occupied area, either cannot be taken as belonging at all to the actual state itself, or belongs to it not as an amount but as a special quality.

If there are any results from this enquiry it is time we gathered them. (1) The force of a mental state is a phrase which is most ambiguous. It seldom, if ever, means the same as its actual quantity or area. (2) Psychical strength, taken as an amount of psychical existence or a number of its units, is a conception valid and perhaps useful. Its scale may be relative to my varying condition, but again is average, normal, or absolute. (3) The units of this scale probably cannot be shown, and certainly cannot exist bare; but as an abstraction we seem forced theoretically to assume them. (4) Everything in the soul which in any sense becomes more or less, has *so far* a more or less of psychical existence, but only *so far*. Every "state" is complex, and the whole state therefore may have a quantity which bears no fixed ratio to any one aspect. (5) Within our psychical content there thus fall scales indefinite in number and more or less independent and able to diverge. Hence a single state may vary quantitatively in various respects, as well as in respect of psychical existence. And to a certain extent these respects may diverge in quantity. But the practical outcome seems merely this, that before we talk of intensity and before we predicate degrees of strength, we should first of all define its kind and the scale we are to employ. Otherwise may come discoveries where no one knows what is discovered, and controversies where in the end no one understands what is in dispute. But others must judge to what extent this reflection has practical bearing. My object in this paper has been to raise some doubts on an interesting question the difficulties of which, it appears to me, are not sufficiently recognized.

## II.—ON THE DIFFERENCE OF TIME AND RHYTHM IN MUSIC.

By Dr R. Wallaschek.

If in a psycho-physical laboratory an electric hammer gives a regular succession of equal beats, the attentive observer is able to mentally divide this succession of beats into equal periods of two, three or more beats. While perceiving them he divides them, as the musician would say, into bars; he arranges the beats as if they were given in duple, triple or any time, although the actual beats remain unaltered all the time he observes them. This faculty is called the sense of musical time[1]. The beats always represent the same monotonous rhythmical movement, but the observer's mind may assume different attitudes of observation, may change the time division by altering the length of the periods (bars), or uniting another number of beats into one group. The rhythm is in the object, while the time-division is only the form in which our mind perceives the rhythm, the way in which it arranges, systematizes, unites the sensation of several beats into one whole period, into a time-unity. It must also be noted, that this time-sense of the observer, his ability to arrange regular sensations into periods, to perceive them not as single beats but as groups of beats, is an immediate (intuitive) perception, i.e. the observer does not arrive at this form of group-perception through counting the number of beats which make up one group (bar or period), but he immediately perceives the group as such without the medium of counting. The musician has to feel the time intuitively, and his counting it out is only a substitute for feeling it, whenever the time-perception has got lost. Counting is an association of beats with numbers, time-keeping the ability of immediately perceiving beats or sounds in groups, periods or bars.

[1] The French have a peculiar word for it: 'mesure,' as have the Germans: 'Takt.' The English word 'time' is somewhat ambiguous, and hence perhaps the numerous misconceptions of any theory based upon the Time-sense.

One and the same rhythm may be perceived in different time, one and the same time may contain different rhythms. If we ourselves, not the electric hammer, are the performers of the movement, we should very likely alter the accentuation in accordance with the alteration of the time-division, but this would be only a probable not a necessary coincidence; for in spite of an accentuation which is likely to suggest say triple-time, the observer may still follow duple-time in his thought, to such extent can rhythm and time be kept separate from each other. In one word: rhythm is the form of the objective movement, time-sense (mesure, Takt) the form of the perceiving subjective mind. Time-sense is a faculty corresponding to the power of symmetrical visual perception, which is neither the sensation of sight itself nor the mere sum of all the sensational phænomena, but something in addition to them, i.e. the ability of arranging, dividing, grouping the phænomena into equal sections. So then the time-sense is not a sensation proper as hearing, seeing etc., but a mental work of grouping the sensations, and this takes place not in the senses themselves but in the cortex[1].

If we insist on this merely mental character of time-division in music we shall be able to base on a psychological principle a long existing musical controversy, in which musicians have discussed the question whether a composer is bound by the natural structure of his composition to write it down in a certain time-division (say duple or quadruple time) or whether he is at liberty to fix in writing the length of bars or even the whole time-division according to his individual preference or the practical principle of easy reading. These musicians have asked themselves whether time-division has an outside reality or not, whether it is dictated by the object or by the subject. Mr Lussy, who was in favour of the former view, even went so far as to show that Mendelssohn made a mistake in designating the time of one of his compositions. This very fact, however, seems to me a precise counterproof of Lussy's theory, for if the composer himself can make a "mistake" in this respect the structure of the composition cannot have been subject to any very strict and definite rule. It seems that other writers have agreed on a sort of compromise, and they say that one may always know from the very structure of a composition whether it is in duple or triple time, but liberty is allowed as to the sub-divisions of these two classes as to $\frac{4}{4}$, $\frac{6}{8}$, $\frac{3}{8}$,

[1] Therefore Kant was right in calling time an "Anschauungsform," although wrong in considering it to be "a priori," however this latter term may be interpreted.

$\frac{12}{8}$ etc. None of the writers however thought of referring to the psychological character of the subject and of asking "what is time?" in the musical or in a general psychological sense. Had they done so they would easily have perceived its internal, subjective character. Considering this I should say that the structure of the composition as such does not even tell us whether we have $\frac{2}{4}$ or $\frac{3}{4}$ time before us, e.g. the typical example of $\frac{3}{4}$ time is a waltz, but we can very well perceive it as $\frac{4}{4}$ time without altering the composition in the least if we unite four $\frac{3}{4}$ bars into one $\frac{4}{4}$ bar. An instance of opposite transcription may be noticed in Wagner's Tannhaüser-Ouverture. Its second part is written in $\frac{4}{4}$ time and towards the end the theme of the first part (originally written in $\frac{3}{4}$ time) is again repeated. But this time it is written in $\frac{4}{4}$, and yet the object of the theme is the same. I have also seen eminent conductors beat $\frac{3}{4}$ time to this part, although it is written $\frac{4}{4}$. They unite three $\frac{4}{4}$ bars into one $\frac{3}{4}$ bar. This shows that the character of the composition does not compel the composer to *write* a certain time-division, the form of the latter being simply chosen for the practical purpose of easy reading. If we further consider that every regularly worked out composition has an even number of bars, we may transcribe any composition into one of duple bar, if we only unite a period of several bars into one greater bar, which in consequence of the even number of bars must end in duple time. Therefore it is with time as with symmetry; there are not two kinds of symmetry, a twofold and threefold, there is only one, that is represented by evenness, no matter whether the objects which are to be arranged symmetrically are groups of even or uneven numbers, no matter whether the single bars united to a period consist of even or uneven tone-elements. Perhaps an opponent would say: the symmetry of uneven numbers is the triple time. In this case I should ask him to consider that it is not the number of smallest tone-elements that designates the time-division, but a higher and wider formation of tone-groups whose extension lies within the liberties of our perception. I must also add that I am well aware of examples of $\frac{5}{4}$ and $\frac{7}{8}$ time, which under no circumstances could be perceived as duple time, as e.g. in Tristan and Isolde (3rd Act, when Tristan sees Isolde's ship coming). But in this instance the composer purposely left aside all considerations of regularity in order to illustrate the dramatic restlessness of the scene. In such cases the time-division is not a division proper, but is replaced by voluntarily chosen marks to hold the players in concert.

The evenness of time-groups in music arises from the original organic union of dance and music, so that we may say

it is in the last instance founded on the fact that we possess two legs.

Bearing in mind that musical perception (and with it the essence of the musical mind) consists in the ability of group-perception and that this forms an element of the individual intellect, it will be clear—I think—what I wanted to say when I attributed in my "Primitive Music" the origin of music to the time-sense. I wished to point out the peculiar state of mind necessary to intentionally and consciously produce music as a work of art, to distinguish it from a mere vocal utterance which might be the result of a corporal stimulus of and for the moment. Of course I shall be asked why I insist on this difference and why I do not consider primitive music just as much a reflective utterance as a bird's song. My answer is because I found that the starting point of music, the peculiar germ which has alone been capable of the enormous development actually accomplished in music, is the *chorus*, with its frame-work—the dance. What the bird sings, what a single individual may exclaim in joy, in anger or in pain, is the reflective outcome of the feeling, of which the momentary corporal condition is a stimulus, and for which it is a vent. Here the matter ends, and there is no necessity for variety and development. But if two or several people sing together, then song is something more than *merely* the outcome of feeling, for they have to keep their performance in accordance with each other, and to accomplish this they have to observe, to group, to arrange the tones; they have to assume the same psychological attitude as the observer of the electric hammer who perceives the regular beats in the form of groups, bars. They could not keep together, if they did not mark periods (groups), for there is no concert possible without bars. What they perform is rhythm, what they *think* is 'Takt,' and what they feel is 'surplus of vigour.' The necessity for this form of performance arises from the social character of it; it is the necessity along with the ability for acting in concert; and so I might well call the time-sense and with it music itself "*une faculté d'ensemble.*"

Saying this I must add that I do not wish to revive the old theory of distinct faculties, and that where I use the word faculty it is merely for shortness' sake. The fact of my speaking of group-perception shows that I mean a kind of mental activity not confined to music alone, for a group-perception might be the outcome of any sensation, and need only result in music when it is used to form an expression in tones.

When Aristotle said, *ἄνθρωπος μὲν ζῷον πολιτικόν* he might as well have said *ζῷον μουσικόν*, thus indicating not only his sociability (which he has in common with gregarious

animals), but his ability of acting in regulated concert with others, in unison, in symmetry with them, of making his fellow creatures not only members of a society, but forming all of them into one body, one new organism. A musical ensemble, an orchestra, a chorus, is one organism, one person, just as the state represents (juridically) one person, not only a company of several members. In this sense music may be spoken of as a social function (not to be confounded with society-function).

I might now proceed to a further presentment of my theory by meeting some objections or perhaps misconceptions of my critics. The most frequent remark is to pronounce the time-sense as too complicated and to refer the origin of music to the natural rhythm of our heart-beats. This theory has been before the world since the time of Aristotle. But the reader will now see that I had to resist the temptation to this seemingly natural theory. There is no 'time' in the heart-beats themselves, but only in the mind of the observer, and as in the normal condition we observe the heart very little (if we notice it at all) and the abnormal condition is not the time for observation, we could hardly be led in that way to our idea of time-division, especially as we never feel any *necessity* to observe this mere individual phænomenon in the form of regular bars.

Another view is that of Mr S. Wilks[1], who says that "the rhythmical sense *or* sense of time insisted on...as the basis of music is the same thing as the muscular sense already spoken of by physiologists as forming an intimate part of the musical faculty." I must object to two points in Mr Wilks' criticism, (1) that sense of rhythm and sense of time are identical. I may well perceive and perform a given rhythm, say in a military signal, without having any time-sense. Some street-cries, many birds' songs, cannot be given in musical bars (time, Takt, mesure), and yet they are rhythmical. (2) I refer to the great difference between time-sense and muscular sense. We may have a proper muscular-*sensation* it is true, but, in the term time-sense, the word sense is merely metaphorical, for only the further mental process of arrangement of a given sensation into groups, periods or bars, makes up the time-sense. Mr Wilks so much confounds time and muscular sense as to say: "Beating time is in reality the concentration and relaxation of certain muscles." This may be the physiology of beating but not that of time. The intrinsic character of time, however, is not its being beaten, but its being known, it is not the movement of the conductor's arm, but the form of his intellectual perception of music in which his muscular sense

[1] *Medical Magazine*, London, January, 1894, p. 511.

alone helps him nothing. I admit that in the music of primitive times, owing to its connection with bodily movement, it was the muscular impression as much as the auditory, or even more than the auditory, that gave rise to a time-ordered perception. But I can never admit that the perception and the movement (time and rhythm) are identical.

The attention Mr Wilks calls to the muscular sense is certainly of great importance, and is, so to speak, the physiological form of the ethnological fact that primitive music is firmly associated with bodily movement (dance, gesture and action). But it has to be said further: that the muscular sense is not directly and in itself the cause of enjoyment in music, but becomes the cause not only of enjoyment but of high mental edification when forming the basis of a cortical process which consists in arranging a certain number of sensations in time-periods, and perceiving them as whole united groups. Through this mental process the otherwise mere sensuous enjoyment rises to the higher rank of artistic value, while without it the musical performance would have to be placed on the same level with gymnastics or, as in the savage world, with beating and fighting, and this difference in rank certainly exists even for primitive men. Such considerations lead us to the seemingly paradoxical result that the muscular sense has far more importance in the original development of music than the sense of hearing. This view changes at once the whole attitude of an inquiry into the psychological cause of music. It is not the sense of hearing alone which is to be examined, but when the physiology and psychology of music are in question, the subject for inquiry should be the cortical process. The first stimulus is the muscular sense, and the sense of hearing only comes into action later as an additional help in getting a greater number and superior quality of sensational impressions which through their qualitative difference and greater substantial richness might facilitate the course of the cortical process. "Making music" means in the primitive world performing, not listening. In the most primitive concert an audience does not exist, all being performers. A long time is needed before the sense of hearing can take a part of equal importance with the common action based on the muscular sense, and yet again a long time before it becomes the more and ultimately only important sense. The whole structure of primitive music shows this: an unsettled melody, an uncertain and constantly varying intonation, a perpetual fluctuation of pitch; and contrasting this with the strict and ever prevailing rhythm, with the precision and marvellously exact movements of numberless performers—we see where the chief point lies.

The musician is not necessarily one who hears best but he in whom originally the muscular sensation (later on chiefly the acoustic sensation) most frequently results in cortical processes (of group-perception); the painter need not be he who sees best but one in whom sensations of sight result in the most frequent and intense cortical processes, the sculptor he whose tactile sensations most frequently result in cortical processes etc., etc. But in any case I should lay special stress upon the action of the brain and the peculiar form in which this action manifests itself to our consciousness.

Another mistake in explaining the origin of music is to deny any difference between bird's song and men's music, as has been done for instance in a review in the *Boston Leader*[1], where it is said "that birds have a time-sense, as anyone who listens to their songs must admit." I do not admit it, and many observers of the bird's song (whom I have quoted in my book) state the impossibility of writing these songs down in regular bars: i.e. they betray no time-sense. The reviewer evidently thinks of time in the sense of 'tempo' (quickness), not in that of 'Takt.' Rhythm is no doubt "the basis of all motion"—as the reviewer says—but 'Takt,' 'mesure,' 'time' is only the intellectual form of our perception of the motion; the bird's song has rhythm, but the bird no 'Takt,' no 'mesure.' But if my critic nevertheless still holds that the bird has a time-sense, and maintains that bird's song is on that account exactly the same as primitive man's music I will illustrate the striking difference even in a mere external quality, and ask: *Has anyone ever heard any animals sing in concert?* i.e. not only at the same time or responding to each other in immediate succession, but in accordance with each other, in unison? No, and herein lies the difference, this is the point that distinguishes a merely vocal utterance from music. True music requires a degree of observation, an intention and a participation of the intellect, and not *only* a momentary vocal reflex of feeling; it requires the form of time-ordered perception which is lacking in the animal and so strongly pronounced in the choral dance-music of primitive men. An individual vocal reflex arises and vanishes with the stimulus of the moment, while singing in concert requires a definite purpose, a definite arrangement of utterances, which are to be intentionally worked out, practised and preserved in memory. In this settled condition song would in time become monotonous, ineffective, and therefore calls for variety. Variety in face of tradition means progress, development, and thus choral music alone affords the only possible

[1] January, 1894.

starting point of our art; in its intrinsic character lies the germ of music. In the dances of men and animals we can observe a difference similar to that in music. Men dance in a unison and with a *symmetry*, which are wanting in animals' dances, and this deficiency is due to a mental cause which betrays—if I am not mistaken—the most serious difference between men's and animals' intelligence on record.

One can follow the importance of this distinguishing characteristic even in modern music. It is possible to be deceived as to the musical ability of a performer who performs alone, and who may make up by mechanical practice what is wanting in talent, but let him play in an '*ensemble*,' let him accompany the simplest song, and you will at once see what his music is like. This example again points to the chief psychical element of music which once more may be characterised as an *art d'ensemble*.

# III.—THE METAPHYSICS OF THE TIME-PROCESS.

By F. C. S. Schiller.

I do not know whether Mr McTaggart's interesting investigation (*Mind*, vol. II. N. S. 490—504, vol. III. 190—207) of the relations of the Hegelian Dialectic to Time (or rather to the Time-process[1]) has obtained the attention it merits, but the problem he has so ably handled is of such vital importance, and the attitude of current philosophy towards it is so obscure, that no apology is needed for a further discussion of his results. That those results came upon me with the shock of novelty I cannot, indeed, pretend; for the impossibility of reconciling the truth of the Dialectic with the reality of the Time-process has long been familiar to me as the chief, and, to me, insuperable difficulty of the Hegelian position. I propose, therefore, to take for granted the reluctant conclusion of Mr McTaggart's almost scholastic ingenuity, namely that there is no known way of reconciling the (admitted) existence of the Time-process with the (alleged) "eternal perfection of the Absolute Idea"—at all events until some other commentator of Hegelism has attempted to revise and refute Mr McTaggart's arguments—and I wish to consider what inferences may be drawn from it with respect to the method of metaphysical speculation in general.

Before doing so, however, I ought, perhaps, to say a word on what Mr McTaggart himself inclines to regard as the positive result of his inquiry, the fact namely that he has not been able to show that there is *no* possible synthesis of the Absolute Idea with the Time-process, and that he is consequently "entitled to believe that one more synthesis remains as yet unknown, which shall overcome the last and most persistent of the contradictions

[1] I prefer to use the latter phrase in order to indicate that I do not regard "Time" as anything but an abstraction formed to express an ultimate characteristic of our experience, and in order to check, if possible, the tendency of metaphysicians to substitute verbal criticism of that abstraction for a consideration of the facts which we *mean* when we say *e.g.* that "the world is in Time." Of that tendency, I fear, even Mr McTaggart cannot always be acquitted (*e.g.* pp. 493—5), and it seems to me to be at the root of most of the metaphysical puzzles on the subject.

inherent in appearance." For faint as is the hope which nourishes this belief, and groundless as are the assumptions from which that hope may, I think, be shown to spring, one may yet congratulate Mr McTaggart on the candour with which he distinguishes his faith in the Unknown Synthesis from the cogency of a logical demonstration, and on the diffidence with which he declines to avail himself of Mr Bradley's convenient maxim to the effect that "what may be, and must be, that certainly is." For certainly, if one does not scruple to regard utter ignorance as the possibility that 'may be,' and the subjective need of saving one's own theory as the necessity that 'must be,' there is no difficulty which cannot be evaded by the application of that maxim and no contradiction which cannot be so 'reconciled.' My only fear would be that if such an axiom were admitted at the beginning of philosophy, it would also prove its end. Mr McTaggart, however, is to be congratulated on having eschewed the dangers of Mr Bradley's 'short way with the insoluble,' and on preferring to base his acceptance of conflicting views on the ancient, time-honored and extra-logical principle of Faith. Still more admirable, perhaps, is the robustness of a faith, which overlooks the curious inconsistency of denying the metaphysical value of Time, and yet expecting from the Future the discovery of the ultimate synthesis on which one's whole metaphysic depends. For myself I avow that such faith is beyond my reach. If I were driven to the conclusion that the inexorable necessities of my mental constitution directly conflicted with patent and undeniable facts of experience, I fear I should be beset by a sceptical distrust of the ultimate rationality of all things rather than solaced by the vision of an "unknown synthesis."

But in this case I hope to show that there is no need to respect a faith one cannot share, and that Mr McTaggart has given more to faith than faith demands.

If the contradiction cannot be solved, it can at least be exposed and explained. And unless I am very much mistaken, it will appear that the incompatibility between the assertion of the reality of the Time-process, and its comprehension by any system of 'eternal' logical truth (whether Hegel's or anybody else's) has its origin in very simple and obvious considerations.

Mr McTaggart cannot find room for the reality of the Time-process, *i.e.* of the world's changes in time and space, within the limits of Hegel's Dialectic. But is this an exclusive peculiarity or difficulty of Hegel's position? Is the Time-process any more intelligible on the assumptions of any other purely logical system, as for instance on those of Plato or Spinoza? I think the difficulty will be found to recur in all these systems. And

this shows that it is not accidental, but intrinsic to the *modus operandi* of all systems of abstract metaphysics.

They cannot account for the time-factor in Reality, because they have *ab initio incapacitated* themselves from accounting for Time as for change, imperfection and particularity—for all indeed that differentiates the realities of our experience from the ideals of our thought. And their whole method of procedure rendered this result inevitable. They were systems of abstract truth, and based on the assumption on which the truth of abstraction rests[1]. They aimed at emancipating philosophy from the flux to which all human experience is subject, at interpreting the world in terms of conceptions, which should be true not here and now, but 'eternally' and independently of Time and Change. Such conceptions, naturally, could not be based upon probable inferences from the actual condition of the world at, or during, any time, but had to be derived from logical necessities arising out of the eternal nature of the human mind as such. Hence those conceptions were necessarily *abstract*, and *among the things they abstracted from was the time-aspect of Reality.*

Once abstracted from, the reference to Time could not, of course, be recovered, any more than the individuality of Reality can be deduced, when once ignored. The assumption is made that, in order to express the 'truth' about Reality, its "thisness," individuality, change, and its immersion in a certain temporal and spatial environment may be neglected, and the timeless validity of a conception is thus substituted for the living, changing and perishing existence we contemplate. Now it is not my purpose here to dispute, or even to examine, the correctness of that assumption itself. What I wish here to point out is merely that it is unreasonable to expect from such premisses to arrive at a deductive justification of the very characteristics of Reality that have been excluded.

The true reason, then, why Hegelism can give no reason for the Time-process, *i.e.* for the fact that the world is 'in time,' and changes continuously, is that it was constructed to give an account of the world irrespective of Time and Change. If you insist on having a system of eternal and immutable 'truth,' you can get it only by abstracting from those characteristics of Reality, which we try to express by the terms individuality, time, and change. But you must pay the price for a formula

[1] I have in this sentence purposely used "truth" in two senses, in order to emphasize a distinction, which is too often overlooked, between the conceptual interpretation of reality, which is truth in the narrower sense, and the *validity* or practical working of those conceptual symbols, which constitutes their truth in a wider sense. (See below, p. 40.)

that will enable you to make assertions that hold good far beyond the limits of your experience. And part of the price is that you will in the end be unable to give a rational explanation of those very characteristics, which had been dismissed at the outset as irrelevant to a rational explanation. Thus the whole contradiction arises from a desperate attempt to eat one's cake and yet have it, to secure the eternal possession of absolute truth and yet to profit by its development in time! Surely this is *not* a fitting occasion for invoking that supreme faculty of Faith, to which philosophy, perhaps as much as theology, must ultimately appeal?

If these considerations are valid, the idea of accounting for the time-process of the world on any system of abstract metaphysics is predestined to failure, and must be declared mistaken in principle. But there remain two questions of great importance: (1) Do such systems of abstract metaphysics lose all value? (2) Is there any other way of manipulating the time-process so as to fit it into a coherent systematic account of the world?

In answering the first question it will be necessary to supplement the negative criticism of the claims of abstract metaphysics by tracing the consequences of their utter rejection. I have so far contended that no abstract metaphysic could say the last word about the world, on the ground that it was *ex vi definitionis* forced to reject some of the chief characteristics of that world. But if it cannot give us the whole truth, can it give us any truth? Is not the alternative to the rejection of the full claims of Hegelism (and kindred systems) a sceptical despair of the power of the reason to find a clue out of the labyrinth of experience?

Such a plea would not be devoid of a certain plausibility. Stress might be laid on the fact that the fundamental assumption of all abstract metaphysics is the fundamental assumption also of all science, that the whole imposing structure of the 'laws of nature' is formulated without reference to the temporal and spatial environment and the individual peculiarities of the things which 'obey' these laws, and so likewise lays claim to an eternal validity. How then can Metaphysic dare to reject an assumption on which the whole of Science rests? Again, it may be urged that from its very nature philosophy is an interpretation of experience in terms of thought, and must necessarily exhibit the intrinsic peculiarities of human thought. If abstraction, therefore, is characteristic of all our thinking, if all truth is abstract, it would seem that all philosophy must stand or fall with the abstract formulas in which alone our thought can take cognizance of reality, and may not dream of

casting off the shackles, or denying the sufficiency, of the systems of abstract truth which the ingenuity of the past has propounded.

Nevertheless I incline to think that it is possible to steer the human reason safely through between the Scylla of Scepticism and the Charybdis of an Idea absolutely irreconcilable with experience. But to do so it is imperative to define exactly the part played by abstraction in a philosophic account of the world.

Evidently, in the first place, it does not follow that because all truth in the narrower sense (v. *note* p. 38) is abstract, because all philosophy must be couched in abstract terms, therefore the whole truth about the universe in the wider sense, *i.e.* the ultimate account that can be given of it, can be compressed into a single abstract formula, and that the scheme of things is nothing more than, *e.g.*, the self-development of the Absolute Idea. To draw this inference would be to confuse the thought-symbol, which is, and must be, the instrument of thought, with that which the symbol expresses, often only very imperfectly, *viz.* the reality which is "known" only in experience and can never be evoked by the incantations of any abstract formula. If we avoid this confusion, we shall no longer be prone to think that we have disposed of the thing symbolized when we have brought home imperfection and contradiction to the formulas whereby we seek to express it—an accusation which, I fear, might frequently be made good against the destructive part of Mr Bradley's "Appearance and Reality"—to suppose *e.g.* that Time and Change cannot really be characteristic of the universe, because our thought, in attempting to represent them by abstract symbols, often contradicts itself. For evidently the contradiction may result as well from the inadequacy of our symbols to express realities of whose existence we are directly assured by other factors in experience, and which consequently are *data* rather than problems for thought, as from the 'merely apparent' character of their reality, and the moral to be drawn may only be the old one, that it is the function of thought to mediate and not to create. If so, our proper attitude will be this, that while we shall not hesitate to represent the facts of experience by conceptual symbols, we shall always be on our guard against their misrepresenting them, and ever alive to the necessity of interpreting our symbols by a reference to reality. In this manner I conceive that it would be possible to utilize the terms of abstract metaphysics, whenever they seemed to yield useful formulas, without erecting them into fetishes and giving them the entire mastery over our reason. From the tyranny of abstractions there would thus always be an appeal to

the immediacy of living experience, and by it many a difficulty which appals on paper would be shown to be shadowy in the field. And conversely, it would perhaps be possible for philosophy to grapple somewhat more effectively with the real difficulties of actual life.

Nor can I see why philosophers should fight shy of such a procedure. For surely the admission that philosophy is an interpretation of experience in terms of thought does not preclude us from the reinterpretation of our symbols by a reference to experience wherever that may seem expedient and profitable. Why should we commit ourselves to a task which must prove either illusory or impossible, that of the rational deduction of the self-evident? It is true that philosophic explanation came into being because experience is not wholly self-explaining. But to admit this is not to imply that everything requires explanation. For all explanation must set out from certain data, which may either be accepted as facts or considered self-evident, and in no wise necessitate or justify the attempt to explain everything, an attempt which must ultimately derive everything from nothing, by the power alone of an intentionally obscure vocabulary. What the data of such an ultimate explanation of the world should be, admits, of course, of further discussion; but I can see no reason in the nature of philosophy as such why the characteristic of Time should not be one of them. And if by a frank recognition of the reality of Time, Imperfection and Individuality we can reach a deeper, more complete and workable insight into the facts of experience, why should our philosophy be worse than one which is driven to reject them by ancient prejudices concerning the perfections which the world ought to possess?

The abstractions of metaphysics, then, exist as explanations of the concrete facts of life, and not the latter as illustrations of the former, and the Absolute Idea also is not exempt from this rule. Nor is it to a different conclusion concerning the subordination of abstract metaphysics that we are led by the consideration of the first argument adduced in their favour, the fact that all science shares their assumption.

That all science abstracts from the particularity and time-reference of phenomena, and states its laws in the shape of eternal and universal truths, is perfectly true. But this fact will not bear the inference it is sought to draw in favour of abstract metaphysics, and must not be allowed to prejudice the inquiry into the proper method of discovering an ultimate theory of the universe. For in the first place the treatment of its initial assumption by science differs widely from that of metaphysics. Science does not refuse to interpret the symbols with

which it operates: on the contrary, it is only their applicability to the concrete facts originally abstracted from that is held to justify their use and to establish their 'truth.' The mathematical abstractions which enable astronomers to calculate the path of a star are justified by their approximate correspondence with its observed position, and if there were any extensive or persistent divergence between the calculation and experience, astronomers would be quite ready to revise their assumptions to the extent even of changing their fundamental notions concerning the nature of space. But in the case of metaphysics the same principle is not, apparently, to apply. If the Dialectic of the Absolute Idea does not accord in its results with the facts of life, we are not to suspect the Dialectic. It possesses an intrinsic certainty by right divine which no failure can be admitted to impair. If the logical (or rather *psychological*) development of the Idea fails to account for the development in time, we may at the utmost postulate an "unknown synthesis." This *may* be philosophy, but it does not look like science.

In the second place, let us ask *why* science abstracts from the particularity of reality. Not, certainly, because it does not observe it. Nor yet because it ascribes to the deductions from its universal laws a precision which they do not possess. On the contrary, it cheerfully admits that all the laws of nature are hypotheses, represent not the facts but tendencies, are to be used merely as formulas for calculating the facts. But why should we want to calculate the facts by such universal formulas? The answer to this question brings us to the roots of the matter. We make the fundamental assumption of science, that there are universal and eternal laws, *i.e.* that the individuality of things together with their spatial and temporal context may be neglected, not because we are convinced of its theoretic validity, but because we are constrained by its practical convenience. *We want to be able to make predictions about the future behaviour of things for the purpose of shaping our own conduct accordingly.* Hence attempts to forecast the future have been the source of half the superstitions of mankind. But no method of divination ever invented could compete in ingenuity and gorgeous simplicity with the assumption of universal laws which hold good without reference to time; and so in the long run it alone could meet the want or practical necessity in question.

In other words that assumption is a *methodological* device, and ultimately reposes on the practical necessity of discovering formulas for calculating events in the rough, without awaiting or observing their occurrence. To assert this methodological character of eternal truths is not, of course, to deny their validity —for it is evident that unless the nature of the world had lent

itself to a very considerable extent to such interpretation, the assumption of 'eternal' laws would have served our purposes as little as those of astrology, chiromancy, necromancy, and catoptromancy. What, however, must be asserted is that this assumption is *not* an ultimate term in the explanation of the world.

That does not, of course, matter to Science, which is not concerned with such ultimate explanation, and for which the assumption is at all events ultimate enough. But it *does* matter to philosophy that the ultimate theoretic assumption should have a methodological character. To say that we assume the truth of abstraction because we wish to attain certain ends, is to subordinate theoretic 'truth' to a teleological implication: to say that, the assumption once made, its truth is 'proved' by its practical working, by the way in which it stands the test of experience, is to assert this same subordination only a little less directly. For the question of the 'practical working' of a truth will always ultimately be found to resolve itself into the question whether we can live by it.

In any case, then, it appears that scientific knowledge is not an ultimate and unanalysable term in the explanation of things: Science subordinates itself to the needs and ends of life alike whether we regard its origin—practical necessity, or its criterion —practical utility. But if so, the procedure of Science can no longer be quoted in support of the attempt to found our ultimate philosophy upon abstract and 'eternal' universals. If the abstraction from time, place and individuality is conditioned by practical aims, the next inquiry must evidently concern the nature of these practical aims, to which all theoretic knowledge is ultimately subsidiary. And if those aims can be formed into a connected and coherent system, it will be to the discipline which achieves this that we shall look for an ultimate account of the world. Is there then a science which gives an orderly account of the ends of life that are or should be aimed at? Surely Ethics is as much of a science as abstract metaphysics, and if it be the science of ultimate ends, it seems to follow that *our ultimate metaphysic must be ethical.*

Let us consider next what the attitude of such an ethical metaphysic would be to the metaphysical pretensions of abstract universals and the time-process respectively. It seems clear, in the first place, that practical aims, or a system thereof, do not easily lend themselves to statement in terms of abstract universals. For an end or purpose seems to be intrinsically the affair of a finite individual in space and time, and the attempt to regard the timeless, immutable and universal as possessed of ends seems to meet with insuperable difficulties. If, therefore, the ultimate explanation of the world is to be in terms of ends,

it would seem as though it must be in terms of individual ends, realized in and through the Time-process. Nor is there anything repugnant to reason in the conception of an end realized in a time-process that would render it difficult for a teleological explanation to admit the reality of the time-process. On the contrary, if the transition from means to end were instantaneous, the distinction between them would vanish, and lose all meaning. Still less has it been found repugnant either to the reason or to the feelings of men to regard the Time-process as the realization of an end or even of a multitude of individual ends, *e.g.* as a process of spiritual redemption. There is, therefore, perfect harmony between an ethical metaphysic and the existence of individuals in Time and Space, while that existence is found to be irreconcilable with any abstract metaphysical formula.

We must conclude, then, that the method of explaining the ultimate nature of the world by an abstract universal formula, or a series of such, is *not* supported by the methodological use of similar formulas in the natural sciences, which, rightly considered, leads to very different inferences. What compensation then has it to offer us for its inability to take account of many of the chief data which a comprehensive philosophy has to explain? Surely the full reality which has to be explained is the individual in the Time-process. And though it will remain no trivial task to exhibit the rationality of the Real, it has yet become evident that rationality is but one of several attributes to be predicated of Reality, and that a mere rationalism or 'panlogism,' therefore, can never be anything but a one-sided philosophy.

We have to consider next the second question raised (on p. 39) as to whether by pursuing a different method philosophy is able to recognize the reality of the Time-process. And if such philosophic recognition is possible, what is the metaphysical value and methodological bearing of the reality of Time (or rather of the Time-process)? Or is there possibly, as Mr McTaggart suggests (*Mind*, N. S. II. p. 496), "something about Time which renders it unfit, in metaphysics, for the ultimate explanation of the universe"? The prejudice to this effect is no doubt well-founded from the standpoint of a philosophy whose initial abstraction excludes Time. But if we decline to hamper ourselves by a method which fails *de facto* to account for Time and imperfection, while its claim *de jure* had to be disallowed as ignoring the supreme practical limitations under which the whole understanding operates, the case is different. It has already been shown that an ethical metaphysic has no difficulty in conceiving the ultimate end as realizable in the Time-process. And indeed from such a standpoint it is possible

to indicate an explanation even of the Becoming which is so puzzling a characteristic of the Real, and the source of all our conceptions of Time and Change—it may be ascribed to the struggle of finite existence to attain that ultimate end. Instead of being left over as an inexplicable surd at the conclusion of a metaphysical explanation, the Time-process thus becomes an integral part of that explanation, and a fruitful source of inquiry opens out to philosophy concerning its value in the discovery and estimation of ultimate truth. It would be impossible within the limits of this paper to attempt any detailed account of the metaphysical conclusions to which the admission of the reality of the Time-process would lead. Suffice it to say that I am convinced that the system we should arrive at would prove no less coherent and complete than any of the great systems of abstract metaphysics, and that the difficulties which it may at first sight seem to involve are due to an (inconsistent) reversion to the methods of abstract metaphysics.

There are however two points which it seems necessary to emphasize. The first is that a metaphysic of the Time-process will stand in the same relation to the explanation of phenomena by their *history*, as a metaphysic of abstract ideas stands to their explanation by universal laws, *i. e.* the Historical Method will represent the application in science of the metaphysical principle. But while to an abstract metaphysic the Historical Method must ultimately be foolishness, a metaphysic of the Time-process will justify that method by expressing it in a metaphysical, *i. e.* final, form. And this alone would suffice to prove its superiority; for now-a-days we can as little dispense with the explanation of things by their history as with their explanation by universal 'laws.' A philosophy, then, which admits both and vindicates the use of the one, without invalidating the other, (even though it regards its importance as methodological and subordinate rather than as supreme,) is manifestly superior to a philosophy which absolutely rejects one of the most valuable of the working assumptions of science. And if we regard the fact that there is a development of the world in Time as the essence of Evolution, it is obvious that only a theory which accepts this Time-process as an ultimate datum will be capable of yielding a philosophy of Evolution and is worthy of the name of Evolutionism.

The second point concerns the ultimate difficulties which are left over on every known system of philosophy, and form antinomies which are insoluble for the human reason as it stands. Such, on Mr McTaggart's theory, are the existence of change and imperfection, such, in his opinion, would be the beginning of the Time-process on mine. Now in face of these

facts an abstract metaphysic is in an extremely awkward position. If it scorns to excuse its failure by pious phrases concerning the infinite capacity of a non-human mind to solve the insoluble, if it dreads to have recourse to the more impious ἀργὸς λόγος of Mr Bradley, and to postulate an Absolute which 'absorbs,' 'transmutes,' 'submerges,' 'suppresses' and 'reconciles' all difficulties *ex officio*, in a manner no doubt highly satisfactory to itself and Mr Bradley, two alternatives remain. Either the idea that a contradiction is a necessary proof of falsehood must be given up, and one or both sides of the antinomy must be accepted in spite of everything—in which case it is hard to say what weapon would be left to refute the most patent absurdities; or one must hope for such an enlargement of the human reason as will give it an insight into what is at present incomprehensible. For the difficulties in question have been under scrutiny too long to render it credible that any thinkable solution has been overlooked. If, however, a development of the human mind be admitted, the reality of the Time-process, in which that development takes place, can no longer be denied, and abstract metaphysic becomes indebted to it for the means to solve its difficulties. Is it not curious, then, to go on maintaining that the Time-process is unfit to form a factor in an ultimate philosophy?

An evolutionist philosophy on the other hand would not only be entitled, but bound, to await a solution of its difficulties from the secular development of the Time-process which had generated them. For its ultimate appeal is not to the abstract reason but to experience, to the Time-process in which that reason develops. It is consequently an *ignoratio elenchi* to infer that a view leading to an antinomy is false, unless it can be shown that the antinomy is a permanent one. But not only is that impossible, but a solution *ambulando* may be expected on two grounds. (1) Reality, the data of our reasonings, may so change as no longer to suggest the antinomy. For instance, the problem of imperfection would vanish, if reality attained to perfection and not even a memory remained of the imperfect. And (2) the antinomy might be resolved by such a development of the mind as would enable it to see through its present difficulties. As for instance, if we could view the world from the standpoint of Mr Bradley's Absolute. I am aware that many of our present philosophers have a rooted objection to putting their hope in the future; yet it is only in the direction of an abandonment of the prejudice against the reality of Time, that I can descry a future for hope, a future for philosophy and a philosophy for the future.

F. C. S. SCHILLER.

## IV.—THE RELATION OF ATTENTION TO MEMORY.

By W. G. Smith.

It is obvious to every one that there are endless degrees of certainty and security in the knowledge which we have acquired, whether it be practical or scientific. Some things we cannot help recollecting: other things pertinaciously refuse to be recalled, or they come into our consciousness only after great effort. If we try to give an account of the reasons why some given fact or experience has impressed itself on our memory, we find ourselves at once able to name a large number of factors which may have had some share in bringing about the result. Our memory may be distinct and ready because our interest was aroused when the fact first became known to us. We may have given special attention to the fact apart from its emotional character, or we may have had it presented to us in a specially vivid and intense form. It seems plain also that the power of recollecting will depend in part on the general physiological condition of the individual, on the degree of his health or strength, at the time when he first acquires his knowledge as well as at the time when he attempts to reproduce it.

Some of the factors which condition memory have already been the subject of important researches. One problem among others of which Ebbinghaus[1] has given the solution, has been that of ascertaining what effect the lapse of time since learning series of meaningless syllables has upon the ability subsequently to reproduce such series. A similar though much simpler problem has been studied by Wolfe[2] in his investigation regarding the duration of our memory for musical tones. Recently Müller and Schumann[3] have studied the effects of rhythm and other modifications of the internal relations between the syllables in series like those used by Ebbinghaus. Evidently it is to such investigations as those, carried out according to

[1] *Über das Gedächtnis.*
[2] *Philosophische Studien*, III. p. 354.
[3] *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*, VI. p. 80.

the experimental method, that we must look for definite and exact information regarding the conditions of memory and the actual processes involved in its working.

One of the elements in memory of whose efficiency we are sure, but whose exact function has not yet been studied, is that of Attention. It is this problem, the relation of Attention to our power of associating and recollecting objects presented to consciousness, that is dealt with in the following investigation. It was in the course of experimental work dealing with the subject of Mediate Association[1] that its importance and the need of a separate study of the problem became evident. My aim has been to isolate this factor and shew what is the effect when a subject or observer submits himself for the purposes of experiment to conditions which bring about various forms of distraction. I arranged and began the series of experiments which are here described in the Leipzig Institute for Experimental Psychology in the summer of 1893: they have been carried on since in the Physiological Laboratory, Oxford, in the summer of 1894[2]. To all those who have assisted, whether as reagents or in giving advice and help, I wish to express my heartiest thanks.

The method employed by Ebbinghaus of repeating aloud series of meaningless syllables till they could be said by heart seemed inapplicable to the present problem. If it is difficult to keep a given state of attention constant for short intervals, the difficulty could only be heightened by the increase in the length of time required for learning when the attention is distracted. And if the object be to isolate the process of attending from the other processes which normally enter into the act of memorising, then we must have some means for analysing the complex elements involved in such a mode of memorising as that adopted by Ebbinghaus. On the other hand the method employed by Münsterberg in his investigation *Die Association successiver Vorstellungen*[3], and elsewhere, seemed capable of being used for the purpose of this investigation. The principle of this method consists in presenting the subject matter which the reagent has to commit to memory in such a way that he acquires a certain knowledge of it; by noting the number and kind of errors committed in the attempt to reproduce what has been learned one obtains a measure of

[1] This Journal, III. N.S., p. 289.

[2] A paper describing these experiments was read before the Physiological Section of the British Association for the Advancement of Science at the Oxford meeting, 1894.

[3] *Zeitschr. f. Psych.* I. p. 99. Cf. *Beiträge zur experimentellen Psychologie*, Heft IV. p. 121.

the strength and accuracy of the associations which have been formed. Obviously, if the conditions under which the subject matter is presented remain constant, the total of errors committed ought to remain fairly constant; there seems theoretically no reason why the process of learning should be carried to the point where the memory becomes perfect. The method employed in the following experiments is in principle the same as that initiated by Münsterberg: in detail however there are many variations.

Letters of the alphabet, presented in such a way that disturbing ideas and associations should not readily be suggested, formed the subject matter which the reagent had to commit to memory. They furnish a convenient and easily variable material, and though objections, which will afterwards be referred to, may be made to their use, yet practically it was found that they were sufficient for the purpose in hand. After a considerable number of experiments involving a trial of various modifications, the following method was adopted and with slight changes employed in all the experiments whose results appear in the Tables. Twelve letters arranged in three lines, one above the other, were written on a card[1]: the card was placed on a stand so that the subject who sat close by could read the letters with perfect ease. Previous to the actual experiment the part of the room where the reagent sat was in darkness; by a suitable arrangement the person in charge of the experiments could illuminate the card for any desired length of time[2]. The time chosen for exposure was ten seconds; at the close of this interval, or in the later experiments after a pause of approximately two seconds, the subject was required to repeat as much as he could remember of what he had learned while the card was visible: this together with his remarks was then recorded.

Perhaps the greatest difficulty in the investigation lay in the arranging of conditions which would secure variation of attention without involving any too complicated mental activity on the part of the subject. The forms of distraction used must be simple and must at the same time have a distinct and appreciable effect. In various researches dealing with the

[1] A copy of one of the cards taken at random may be given:—

b f l g
s w k r
t x m d

[2] In the first experiments the light was furnished by a small incandescent electric lamp: later this was replaced by an ordinary gas-burner the supply of which could be regulated at will. During the actual experiment the reagent was completely screened off from the person conducting the experiments.

relation of attention to reaction-time, the distraction has been brought about by different kinds of sensory impression, such as the playing of music, the beating of a metronome, or successive flashes of light. It is plain however that such a means of producing inattention would be of little use here: the conflict between a series of sense-presentations and the somewhat engrossing activity involved in learning a combination of letters would be too one-sided and unequal. In one group of experiments a metronome was kept beating while the experiment was going on; the subjects however remarked that they did not notice the sounds at all while learning. It was suggested that by requiring the subject to introduce into the regular beating of a metronome which was set agoing beside him rhythms of varying complexity, one could obtain distinct and simple forms of distraction. As however no definite or constant result was obtained by this method, it was abandoned for the one which was employed in all the experiments which are summarised in the Tables. According to it the activity involved in memorising is interfered with by another form of activity.

A distinct but not too complicated device for securing what one may call mental distraction consisted in requiring the subject, while learning the letters on the card, to perform a simple sum in addition, viz., that involved in repeating the series 2, 4, 6, 8,... or rarely, when the former series tended to become too mechanically easy, the series 3, 6, 9.... In order that an effective control over the behaviour of the subject might be secured, he was required further to repeat the numbers aloud and to make each step in the addition coincide with the stroke of a metronome beating at the rate of 60—70 strokes per minute. In order to compare the results of this form of distraction with those gained when the vocal organ was exercised, but the mental activity implied was relatively small, the subject was required in the experiments of the next group[1] to repeat with each stroke of the metronome a simple syllable such as *la*. The distraction caused by speaking was next compared with that caused by employment of another set of muscles, viz., those employed in tapping the table with the forefinger, each tap coinciding with a beat of the metronome. Lastly experiments were made in order to gain a normal result

[1] In order to facilitate reference to the different sets of experiments, all those involving one special form of distraction are taken together and referred to as a group. The groups are given here in the order in which they appear in the various Tables. Speaking generally, we may say that in group I. the distraction was mental, in group II. vocal, in group III. muscular.

and see the value of reading alone without any distraction save that caused by the fact that the metronome continued to beat. The order in which the distractions were introduced was varied, but they were always arranged so that before any one of the four variations could recur, the other three had been tried. The rate of the metronome was kept constant for each set of four experiments, and in each hour the total number of successful experiments numbered four or a multiple of four. When owing to any cause an experiment did not succeed, further experiments were made until an even number was reached: in this way there was some guarantee that conditions favourable or unfavourable to the memory would affect all groups equally. No attempt was made to keep the interval between the experiments constant; such a constancy seems by no means so necessary with this method as it is when an engrossing and wearying effort has to be kept up for a prolonged interval. In any case the work of recording the observations of the reagent makes such constancy very difficult. No system was used in choosing the cards for the experiments; it could only be rarely and by accident that different individuals had to memorise the same combinations of letters in the same groups. Not more than twice or thrice in all the experiments was the same card used over again with any one individual.

There are two methods by which one can numerically estimate the value of the answers given by the subjects. The method of summing errors has already been referred to. The other method consists in estimating the value of what has been actually given, instead of paying attention only to what has not been given or has been given wrongly. Each takes expressly into account what the other has neglected: with a sufficiently large number of experiments the two methods ought to give similar results. The first or negative method of estimation does not resemble any procedure employed in practical life: the second or positive method, on the other hand, relies on the principle of positive valuation commonly employed in estimating the answers given in examinations.

In dealing with the errors according to the negative method the following classification was adopted. The first class (*o*) consists of cases in which a letter is omitted which was written on the card, the second (*i*) of all cases in which a letter is inserted which ought not to be present, whether that letter was not on the card, or though upon the card is wrongly given a second time. In the third class (*d*) are included errors due to displacement or disorder, whether that is owing to reproduction in partly wrong order, or to complete ignorance of the position. Each error has the same weight attached to it and counts 1;

the total number of errors gives a basis for estimating the work of the memory in any instance.

The arrangement of values according to the positive method was more difficult; one is liable indeed to the charge of arbitrariness in affixing any kind of value. The following classification however seems based on a natural and definite principle of division. The letters which were reproduced were arranged in three classes: (1) the letter named is given in an entirely wrong position, or its position is quite unknown: (2) the subject has a certain imperfect knowledge of the position and order; the letter is put in the right line, or in its correct place in a group of letters which is in a wrong position: (3) when everything is right as regards the letter, full value is given. Corresponding to the three degrees of correctness, three values are assigned; to the letters of the first class is given the value 1, to the third the value 3; the letters of the second class receive the intermediate value 2. A perfectly correct answer then would receive 36 marks; according as the answer is more or less incomplete the total value varies. A more complicated system of valuation, which differentiated more exactly between the different kinds of displacement or disorder included in the second class, was employed in the first estimation of the results. A special value, for example, was given where the order was simply reversed: then, however, the question arises, what is to be done with a case of reversed order inserted in the wrong line? All such complications are avoided by the division given above, which is based on a perfectly simple principle. As a matter of fact the results gained by the two systems agree in all essential points. It happened not unfrequently in the earlier experiments that an individual gave several letters in a line without indicating whether he had any recollection of their position in the line. After some hesitation I decided to regard this lack of positive information as equivalent to uncertainty on the part of the subject as to the actual position of the letters. When a letter was wrongly inserted or repeated, it was simply disregarded; in the case of repetition the benefit of the doubt was given, and that letter taken into account which approached most closely to the correct position. It may be said that according to this procedure an essential feature in the answer is unjustifiably neglected. It is plain, however, that if the method of positive valuation is to keep strictly to its principle of recognising what is actually correct in the answer, cases of insertion cannot properly be taken into account. In fact, as will be seen from an inspection of Table III. which gives an analysis of the errors in each group, these cases form a pretty

constant, and in most cases relatively unimportant element in the total of errors. It is however easy to subtract from the mean totals in Table IV. the average errors of insertion: the result, it may be remarked, is either to remove or lessen the discrepancies which exist between the two Tables.

As was before remarked, the reproduction by the subject of what he recollected followed in the earlier experiments immediately after the illumination of the card ceased. The result of this arrangement often was that the subject, fearful lest all should disappear, tried to give with a rush what was in his consciousness at the moment, or seemed in perfect readiness for being reproduced. As this tended in some measure to defeat the purpose of the experiments by reducing the part played by memory, the mode of reproduction was changed. Accordingly, in the second division of the experiments the subject was required to give what he remembered at a signal which followed two seconds later. This, it is plain, introduces a new and disturbing factor, for the question at once arises; what is being done in the two seconds? In order to prevent further repeating and memorising during this pause the subjects were directed to continue the activity which had during the time of exposure served as a means of distraction. It may be objected that the original inequality of these activities as regards their ease of execution would interfere here and cause varying loss of memory during the pause: this must be admitted, especially since in the last group there was no distraction. But it must be pointed out that this inequality, so far as our knowledge goes, would have its effect not through varying difficulty, but mainly through the varying completeness with which the field of consciousness was occupied by the activity. The amount of work we do in the interval between learning a task and reproducing what we have learned may have an effect on memory, but this factor, so far as I know, has never been directly taken into account and experimentally studied. Had a new and uniform mode of occupying consciousness been employed in the pause, there would still have been possibilities of error: the reagent must suddenly recollect and start upon something new, an effort whose difficulty would vary according to the difficulty of the preceding effort.

It has not seemed necessary to give in separate tables the results of the experiments involving the two different methods of reproduction. On calculating the results separately it was found that the difference between the two sets of results was not great or important. There are variations of course, not merely in the absolute totals but also, though seldom, in the relative positions assigned to the groups in the two divisions.

But these variations seem to be of the same nature and extent as those which were found when each half of the experiments, furnished by the first three reagents mentioned in Tables II. III. and IV. was calculated separately for each individual. That no constant and appreciable factor is neglected by presenting the results together can be definitely shewn. The following Table gives the mean of the average values assigned to the subjects in the first (A) and in the second (B) division of the experiments. The upper line in each division gives the results obtained by the negative, the lower those given by the positive method. The numerals in the first horizontal column designate the groups in the way already mentioned; the total number of experiments in each group, except the third, is for the first division 29. The third group was started later and includes 19 separate results. In the second division, owing to a slight irregularity in arrangement, the numbers differ slightly for the different groups; in the first there are 33, in the second and third 34, and in the fourth 33 experiments.

TABLE I.

| | I | II | III | IV |
|---|---|---|---|---|
| A | 10·0<br>11·9 | 9·5<br>15·3 | 8·2<br>16·4 | 7·55<br>21·4 |
| B | 10·1<br>11·3 | 8·5<br>15·6 | 8·0<br>17·6 | 7·4<br>21·3 |

This Table, it ought to be remarked, contains the results of experiments made with the last six subjects whose experiments are given in the succeeding Tables. The experiments made with Wh., A. and B., the first three subjects, all involve a pause of two seconds after memorising; they differ however as regards the way in which this pause was employed. Wh. did nothing during the two seconds, being directed to remain perfectly passive; A. in many cases forgot to carry on the activity which had served as a means of distracting, but did not attempt actively to memorise. B. on the other hand fulfilled the directions with much greater exactness. The resemblance of the results gained under the various conditions gives ground for believing that the relative values assigned to the groups represent constant and definite processes, and that the slight modifications in method do not in any appreciable degree

interfere with the main variations which it was the purpose of the experiments to study. In Table II., which is given below, the results are analysed according to the first or negative method. The first vertical column contains the letters which have been used to designate the different subjects. Under $N$ is given the number of experiments made by the subject in each of the four groups: the total number of his separate results is thus got through multiplying this number by 4[1]. The character of the various groups has already been described. Under $a$ is given the average value of each experiment; under $mv$ the mean variation of each actual experiment from the average, this figure being got by adding together all the amounts by which each separate result differs from the average, and then finding their mean. Under $r$ is given the probable error of the average $a$, calculated according to the formula $r = 0{\cdot}6745\sqrt{\frac{\Sigma v^2}{n(n-1)}}$, $\Sigma v^2$ being the sum of the squares of the amounts by which each result differs from the average, and $n$ the number of results concerned. In Table III. is given the average number of errors of each reagent in the three classes ($o$, $i$, $d$,) already described.

TABLE II.

| | | I | | | II | | | III | | | IV | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $N$ | $a$ | $mv$ | $r$ | $a$ | $mv$ | $r$ | $a$ | $mv$ | $r$ | $a$ | $mv$ | $r$ |
| Wh. | 24 | 8·8 | 2·5 | 0·37 | 8·5 | 1·75 | 0·31 | 7·7 | 1·8 | 0·35 | 7·0 | 1·7 | 0·28 |
| A. | 19 | 8·3 | 1·3 | 0·31 | 7·3 | 1·8 | 0·35 | 6·7 | 1·7 | 0·33 | 6·8 | 1·5 | 0·29 |
| B. | 22 | 10·1 | 1·5 | 0·28 | 8·9 | 1·2 | 0·31 | 7·9 | 2·0 | 0·38 | 8·5 | 2·2 | 0·41 |
| He. | 15 | 9·3 | 1·2 | 0·25 | 7·7 | 2·5 | 0·49 | 7·4 | 2·8 | 0·66 | 8·7 | 1·7 | 0·40 |
| W. | 15 | 9·9 | 1·4 | 0·31 | 9·1 | 2·0 | 0·46 | 8·2 | 1·6 | 0·40 | 7·4 | 1·8 | 0·40 |
| G. | 10 | 11·6 | 2·1 | 0·54 | 11·7 | 2·6 | 0·59 | 10·6 | 2·5 | 0·79 | 8·8 | 2·0 | 0·53 |
| M. | 7 | 8·6 | 0·9 | 0·29 | 8·4 | 1·0 | 0·35 | 5·7 | 2·5 | 0·77 | 4·4 | 1·6 | 0·59 |
| K. | 8 | 11·1 | 2·1 | 0·68 | 8·75 | 0·85 | 0·36 | 8·75 | 1·0 | 0·33 | 7·4 | 1·6 | 0·52 |
| H. | 7 | 9·4 | 1·5 | 0·35 | 7·8 | 1·4 | 0·58 | 8·6 | 1·6 | 0·53 | 8·0 | 1·1 | 0·39 |

[1] The deviations from this rule are so few that they are best given in a note. The following corrections should be applied in Tables II. and IV.:— the number of experiments made by He. W. G. in Group III. should be 11, 10, 8, respectively instead of 15, 15, 10, and by G. in Group II. 11 instead of 10.

TABLE III.

| | I | | | II | | | III | | | IV | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *o* | *i* | *d* | *o* | *i* | *d* | *o* | *i* | *d* | *o* | *i* | *d* |
| Wh. | 5·8 | 0·9 | 2·1 | 5·2 | 1·0 | 2·3 | 4·4 | 1·1 | 2·2 | 4·2 | 0·9 | 1·9 |
| A. | 5·7 | 0·9 | 1·7 | 4·5 | 1·2 | 1·6 | 3·8 | 1·1 | 1·8 | 3·9 | 1·1 | 1·8 |
| B. | 4·3 | 1·9 | 3·9 | 4·0 | 1·2 | 3·7 | 3·7 | 1·4 | 2·8 | 3·05 | 2·15 | 3·3 |
| He. | 7·7 | 0·2 | 1·4 | 5·9 | 0·5 | 1·3 | 5·2 | 1·1 | 1·1 | 4·65 | 1·65 | 2·4 |
| W. | 6·9 | 0·9 | 2·1 | 5·9 | 1·1 | 2·1 | 5·1 | 1·1 | 2·0 | 4·0 | 0·8 | 2·6 |
| G. | 5·6 | 2·9 | 3·1 | 5·0 | 3·2 | 3·5 | 4·0 | 2·7 | 3·9 | 3·5 | 2·1 | 3·2 |
| M. | 7·6 | 0·1 | 0·9 | 6·4 | 0·7 | 1·3 | 3·3 | 1·0 | 1·4 | 1·7 | 1·6 | 1·1 |
| K. | 5·9 | 1·2 | 4·0 | 4·0 | 0·9 | 3·85 | 4·5 | 0·9 | 3·35 | 2·5 | 1·5 | 3·4 |
| H. | 8·3 | 0·55 | 0·55 | 6·7 | 0·1 | 1·0 | 7·6 | 0·3 | 0·7 | 4·0 | 0·4 | 3·6 |

In Table IV. are given the figures representing the values of the different groups when the results are analysed according to the positive method. The Table is constructed on the same plan as the second. The amounts assigned according to the three degrees of value assumed by the positive method have not been summed up separately[1].

TABLE IV.

| | | I | | | II | | | III | | | IV | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *N* | *a* | *mv* | *r* | *a* | *mv* | *r* | *a* | *mv* | *r* | *a* | *mv* | *r* |
| Wh. | 24 | 15·0 | 3·6 | 0·62 | 16·8 | 3·2 | 0·55 | 19·2 | 4·0 | 0·72 | 20·0 | 2·9 | 0·49 |
| A. | 19 | 15·8 | 3·4 | 0·68 | 19·8 | 3·8 | 0·76 | 21·4 | 4·3 | 0·77 | 21·2 | 3·2 | 0·58 |
| B. | 22 | 15·9 | 2·9 | 0·53 | 18·1 | 4·0 | 0·73 | 20·4 | 3·1 | 0·57 | 27·2 | 3·3 | 0·64 |
| He. | 15 | 11·0 | 1·6 | 0·34 | 16·5 | 5·9 | 1·17 | 18·1 | 4·8 | 1·23 | 17·9 | 2·9 | 0·63 |
| W. | 15 | 11·6 | 2·5 | 0·55 | 14·2 | 3·3 | 0·75 | 17·4 | 3·8 | 1·04 | 19·9 | 3·9 | 0·94 |
| G. | 10 | 13·4 | 4·4 | 1·11 | 14·5 | 3·8 | 0·95 | 18·1 | 2·85 | 0·82 | 20·6 | 2·8 | 0·88 |
| M. | 7 | 12·0 | 2·0 | 0·67 | 14·7 | 2·3 | 0·77 | 23·3 | 6·4 | 1·97 | 28·6 | 3·2 | 1·14 |
| K. | 8 | 11·5 | 3·4 | 1·06 | 17·1 | 2·9 | 0·89 | 15·9 | 2·1 | 0·68 | 22·0 | 3·5 | 1·05 |
| H. | ·7 | 10·3 | 2·2 | 0·76 | 14·6 | 3·4 | 1·35 | 12·3 | 3·2 | 0·93 | 19·7 | 1·8 | 0·56 |

[1] It may not be amiss to give the figures representing the average result for all the subjects in each group : they present a sort of typical curve. The numbers in the upper and lower lines give the results of the negative and positive analysis respectively.

I. 9·7 II. 8·7 III. 7·95 IV. 7·4
12·9 16·3 18·5 21·2

Before going on to discuss the theoretical value and meaning of the numerical results given in the Tables, I wish to refer shortly to the question how far the methods of experimenting and handling the results are trustworthy. One can judge best of such matters by presenting data such as we have in the foregoing tables. The question, for example, whether combinations of letters of the alphabet will not, when used as subject matter for memorising, give results too uncertain and variable to allow of any conclusion as to the actual processes of association and memory, receives its answer in the foregoing numerical analysis. It is difficult to see how the regularity and constancy of the numerical values can be explained if the method be unreliable. To say that in a single experiment any one letter or combination of letters reproduced may be due to accident is true; to conclude that therefore the same error attaches to prolonged series of experiments is not justified. Nor does the fact that the same letters are employed more or less often during the course of an hour create a difficulty: the combinations of letters employed are thoroughly uninteresting, and have no tendency to remain fixed in memory after a particular experiment has been finished. In any case the possible errors arising from this cause will obviously distribute themselves over all the groups, and disappear as the number of experiments increases.

This last observation applies equally when we consider the errors due to slight variations in the time of exposure, in the length of the pause, in the rapidity with which the subjects react to the signal for reproduction in the various cases. That different combinations of letters will be learned with varying ease or difficulty is also a feature which necessitates having a fairly large number of observations. Two practical sources of error remain to be mentioned: first, the tendency to form intelligible words out of the letters presented; second, the irregularity with which the distracting activities were carried on during the time of exposure and during the pause. As regards the first error, it has to be noted that with almost no other observers than A. and B. did it make its appearance. Where it does appear however, this tendency is very annoying; when once the idea of forming intelligible words out of the letters occurs to the subject, it is very difficult to suppress it, however much he may wish to do so—in fact the more he wishes the more difficult is it. I have excluded the cases where this error distinctly endangered the result; in the case of the observer A. very many experiments had to be rejected for this reason. The second error illustrates the difficulty of carrying out two conscious activities simultaneously. Whenever the

subject broke down during the experiment, for example, when the attempt to do the sum in addition proved a complete failure, then the experiment was stopped. When however the irregularity in keeping time with the metronome and in the other processes was not too great, the observation was accepted. As the state of mind during the pause is not so important, and as it was advisable not to disturb the reagent by insisting too rigidly that the distracting activity should be carried on through the pause, a greater latitude was allowed in this respect. In all cases however it was understood that the pause was not to be used for the purpose of actively memorising. The question may be raised, what happens when the reagent remains passive during this interval? As far as I can gather, a sort of after image of a line or part of a line seems to be present; it is faint and indefinite in the most of cases, and gradually fades away.

In order to give opportunity for judging of the extent to which the averages of the total errors and of the positive values given in Tables II. and IV. really represent the actual observations, both the mean variation and the probable error have been calculated. The former measures the average extent of deviation from the mean, and in doing so naturally gives great weight to a large deviation. One or two such deviations occur in almost every series, usually one positive deviation being nearly compensated by an opposing negative deviation: they have in every case been included, and no number has been rejected because it was unusually large or small. It is obvious, however, that such deviations are abnormal, and that the mean variation, which makes one bad observation outweigh several good ones, does not give any true representation of the character of the deviations; the larger the error is the less likely is it to occur. For this purpose the probable error is the best guide: in it both the extent of the deviations and the probability of their occurrence are taken into account: the resultant figure $r$ gives the range on either side of the mean within which the observations probably fall. With the help of the mean variation and the probable error we can compare the results here obtained with those given in other researches: it will be granted I think that, comparing the extent of the probable error given in Tables II. and IV. with that reached in the observations of Ebbinghaus, or the mean variation with that which Oehrn[1] finds in experiments similar to those of Ebbinghaus, one finds a sufficient regularity and steadiness in the values assigned by both methods to the various stages of memory.

[1] *Experimentelle Studien zur Individualpsychologie.*

The reliability of the positive method of valuation seems confirmed by the close correspondence which the relative positions assigned by it to the various stages of memory shew with those indicated by the other method: with few exceptions what is proved to be a weakened memory by one method is likewise proved by the other. With absolute values we have here of course primarily nothing to do; it is the relative positions assigned to the different groups that is our chief concern. That the classification of values adopted in the working of the second method is merely arbitrary could in no case be reasonably maintained; that it is in a high degree trustworthy seems proved not merely by the constancy of the relative values which it assigns, but by the general support which it gives to the negative method. The discrepancies between the two methods which do exist can in most cases, as before remarked, be removed or lessened when errors of insertion are taken into account in the second method as well as the first. The other divergencies are only such as might be expected, for it is only roughly that the two methods supplement each other. This is at once apparent when the values assigned to single experiments are considered; it is only when a larger number of observations are taken that the correspondence becomes definitely established. With respect to single experiments it is the second method which gives the truer estimate—truer in the sense that the relative positions indicated by it correspond more closely to the final relations of the groups as established by both methods than do those gained where the sum of errors is considered.

In beginning experiments care was always taken that the subject should by actual experiments become familiarised with the task he was required to perform. A considerable amount of practice was gone through by several of the subjects before the final experiments began, owing to the number of tentative experiments that were carried through at the beginning of the investigation. That the influence of practice and exercise can not be so great here as in experiments where a certain more or less difficult task has to be done perfectly, and to be persisted in till finished, seems clear; where the learning on the other hand is continued only for a short time with no aim at final correctness, it is obvious that the subject has far less drill and that there will be less growth in the facility of learning than where series of syllables have to be learned by heart. And at the same time we may expect that the influence of weariness will also shew itself much less where a method such as the present is used. As a matter of fact, while one observer complained of being tired at the end of an hour's work, another was surprised

at such a complaint; the others made no remarks on the subject. Only in regard to one of the groups, the third, was the remark made that the task seemed to become distinctly easier. That in general there was a gradual improvement in the memorising ability of the subjects may be concluded from an inspection of the figures in Table I.; in this Table however the results in the second division shew the effect of exercise complicated with other factors. In order to gain more exact data I have analysed separately the results of the three observers who have furnished the longest series of experiments, the average values for the first and second halves of the series being calculated for each group. In some cases there is a fall in the value of the memory: in the majority of cases there is a rise, which however is not specially conspicuous in any one group. With reference to the capabilities of the persons who assisted in the investigation, it may be remarked that all save one are graduates or students of philosophy and psychology, while three are teachers of philosophy.

The general features of the results presented by this investigation may now be summed up. The greatest distraction is that caused by the activity involved in summation, while the use of the organ of speech causes a smaller, but still distinct, disturbance. The effort required in tapping the table produces generally a certain disturbance: its effect however is neither so universal nor so distinct. These conclusions may be taken as proved by both methods; the negative method, in addition, shews that the most prominent factor in the weakened memory is the diminution in the number of letters retained. The average number of errors of displacement and of insertion is, on the other hand, smaller and remains for each group practically constant; relatively those errors take a larger place in the results of the first and second groups when we consider them in connection with the decreasing number of letters which are recollected.

There can be little doubt that the factor to which we must look in interpreting the results of the last three groups is that on which various psychologists have insisted, viz., the presence of a motor element in much of our mental activity. And in particular the loss of memory due to the effort of repeating a syllable in an audible voice while one is memorising seems caused by the fact that the reading or learning of any series of letters or words is accompanied normally by a more or less distinct articulation, this articulation being interfered with by repeating the syllable. To what extent our memory or associating processes in any case can act apart from direct or associated motor activity is a further question which cannot be

dealt with here. For the interpretation of the present results it seems necessary to assume that this motor activity plays a very large part in the formation of our associations. The full significance of this assumption can be seized only when we remember that what the subject is called upon to do in all cases is simply to read the series of letters, *i.e.*, to let the series of visual objects which are presented to him impress themselves on his memory. Apart from experimental evidence one might suppose that a series of visual objects would associate themselves together as well as any other series of perceptions or sensations. But, as we see, when the reiterated articulation of a syllable obstructs the further innervation of the articulatory mechanism, the memory is much worse than it is where no distraction is present, and where the unskilled observer would detect no process other than that of simple reading. Such a result indeed is only a confirmation of the fact already ascertained by Pathology of the close connection between sensory and motor activities, and in particular between the understanding of words and the ability to articulate them, or in some other way give to them a motor expression.

These theoretical considerations are amply confirmed by the observations contributed by the subjects. They insist that a distinct and embarrassing obstruction is felt when they attempt to read over the series of letters, an obstruction which is specially marked at a point where a letter such as *z* stands, whose pronunciation is unusually difficult. They see the letters and realise them distinctly as visual objects, but are at the same time impressed with a sense of their inability to connect the letters and form them into a series which can be remembered. And they notice how in the intervals of audible articulation the attempt is involuntarily made to insert an inaudible articulation, to employ *Bewegungs-antriebe*, which shall help to form the letters into a connected whole.

An additional support is lent to this explanation by a consideration of the data presented by the third group of experiments. The object of this group was to allow of a comparison between the motor activity of the vocal organ and that involved in the use of a set of muscles not directly connected with any mental operation. That an exact comparison is hardly, if at all, possible is plain from the fact that we must in any case employ two quite different groups of muscles habituated to different functions. Apart from theoretical exactness however, a basis for comparison may be got by observing what effect activity of the vocal mechanism has as compared with that implied in moving the forefinger. Possibly the act of saying '*do*' or '*la*' is more complicated than that of moving

the forefinger; yet after all a very considerable degree of facility in executing more complicated vocal movements must be granted to most persons. We may then assume equivalence between the two kinds of movements to this extent at least, that regarded physically the energy expended and the effort of innervation required in the two cases are fairly similar.

In almost every instance mere muscular movement produces less of a disturbance in memory than does activity of the vocal mechanism. And the reason for this is evident: the articulatory innervations involved in memorising are most conspicuously interfered with by conflicting activity of the vocal mechanism. The observations made by the reagents are only a concrete expression of this statement: what they notice in the experiments of the third group is a conflict of two motor series such as, for example, is involved in the effort to play on a musical instrument when one hand is required to move in a time different from that of the other. Had the reagents been able to render the two series coincident, and make the rhythm of the finger movement the same as that of the articulatory movement, then the difficulty would have been lessened, and one impulse or innervation would have served to carry out both movements. But owing to the arrangement of the experiments such coincidence would have made the learning too fast or too slow; too fast if a whole line was to be gone through at each stroke of the metronome, too slow if only one letter was to accompany each stroke. In some cases indeed the observers seemed to find a help in the rhythm of the finger movements; when they succeeded in combining the innervations for articulation and for movement an added emphasis was lent to the letters, which seemed to help in fixing them in the memory. It is evident however that experiments directed to the isolation and direct proof of this fact are needed before anything definite can be said.

If the series of letters presented to the reagent were associated as visual objects, then it would be still more difficult than in the experiments of the second group to understand why an indifferent muscular activity, such as that of the hand, should interfere with the associations. It may be said that this activity implies a certain degree of inattention to the letters presented, and no doubt this is true. But the diminution of attention must have been very small; there is a distraction, but it is almost wholly a distraction of the motor mechanism. And it is important to distinguish here between these two things, predominance of a state of consciousness or attention, and that state or attitude of mind which we term activity. In many of its manifestations, and here in particular,

psychical activity, so far as it is a factor different from mere movement of ideas, seems intimately connected with some form of function of the motor system.

According to the testimony of more than one subject, the disturbance caused by the finger tended to disappear in proportion as the effort required to make its movement keep time with the beating of the metronome became more automatic. This would mean that the two motor series conflict and compete with each other only so long as they both remain in direct connection with conscious experience: two disparate activities on the other hand can be carried on simultaneously if one at least be automatic, or carried on apart from our ordinary consciousness. Binet concludes, as the result of an experimental study of such questions[1], that an automatic movement is able to coexist with a voluntary movement because it is not preceded by a conscious mental representation, and consequently does not involve conflict of ideas. This it is obvious is not an explanation, but simply a restatement of facts: why two conscious series of ideas must conflict is not explained either psychologically or physiologically. The theory, that inability to attend effectively to more than one series of ideas is due to a limitation in the available psychophysical energy, does not seem at all convincing, but what should be put in its place is by no means equally clear.

It will be observed that while, with regard to the majority of the observers and the average of the results given by all the individuals, the value of memory shews a diminution in the experiments of the third group as compared with the fourth, yet divergencies occur. For this fact various explanations are available. Apart from accidental variation in the results, which is not a probable explanation, there will evidently be a difference in the effect of these distractions upon memory according as the subject is of a motor, a visual, or an auditory type. I feel inclined to believe that this is partly the explanation of the irregular results of He.; this individual was particularly emphatic in his statements as to the prominence of visual images in the process of reproduction. How far this explanation can be carried is however doubtful; I tried to ascertain from the subjects what their usual kind of imagery was, and to relate it with the results, but was not able to find any definite connexion: to establish such a relation it would be necessary to ascertain by direct experiment to what extent and in what relations the imagery conformed to the different types.

[1] *Revue Philosophique*, XXIX., "La concurrence des états psychologiques."

Another explanation may perhaps be found in the fact that the reagents were left entirely free in their method of learning; they could learn the series slowly, or they could run over the letters quickly and often: especially in the fourth group was there scope given for the varying preferences of the individual. In the other groups the subject, it is plain, had to memorise not so much as he wished, but as best he could. These individual variations may take shape also in another form; according to his momentary disposition he will tend to spend greater or less energy in learning what is presented to him. And apart from this general variability there are the differences which arise from the fact that, as the experiments were actually arranged, a severe distraction alternated with one less severe, or with a state of freedom from distraction. The subject will obviously feel relieved when an easy task is put before him; this however leaves it quite undecided whether he will shew this feeling of relief in memorising much better, the energy expended being the same as before, or whether he will unconsciously with the removal of the difficulty lessen the intensity of his efforts and, sure of learning in any case more than before, will content himself with memorising less vigorously. These divergencies, it is plain, furnish the point of departure for further research and exacter analysis. In particular it would be desirable in a more advanced stage of this research that the conditions of experiment should be altered so that while becoming more artificial, they would still in the end be more precise. A greater similarity in the method of learning would in part be secured by the adoption of a method like that of Müller and Schumann, which secures that each object shall be presented to the reagent in an order and for a length of time which can be exactly regulated[1].

In order to facilitate the analysis of the various phenomena I have begun by discussing the nature of the processes involved in the experiments of the last three groups. It is however only in the first group that we have facts bearing directly and immediately on the phenomena of attention. In fact the three last groups were arranged in order to analyse and illustrate the factors that are involved in the processes of the first group. That we have in this group a real disturbance of attention might be supposed on theoretical grounds; that such a state of mind actually resulted from the experimental conditions was

[1] The series of meaningless syllables used in their experiments were written on sheets of paper; these were fastened on a cylinder which rotated at a known rate and shewed the syllables in succession to the reagent, who was looking through a slit in a screen set before the cylinder.

asserted by the observers. The movements of speaking, said K., one of the most skilled observers, do not become more difficult in the fourth group; what the addition does is to diminish the energy available for learning.

Here again, as in the relation between the second and third sets of experiments, it is not possible to effect an exact comparison between the effort of articulation in the second group with that implied in the repeating the series of numbers audibly. The words uttered in the course of the addition differ with each stroke of the metronome: towards the end of the period of memorising words of more than one syllable are involved. As regards the first point, it is not probable that the effort of repeating different but perfectly easy and well-known words is much greater than that of uttering the same syllable over again. That as the addition progresses we have first words of two syllables and then two or, at most, three words of three syllables, is a more important consideration. The reagents however used constantly a device which minimised the difficulty; emphasising only one out of the two or the three syllables to be spoken, they allowed the voice to die away in pronouncing the rest of the word, which thus formed a sort of indistinct sound or *Nachklang*. That this diminished intensity of articulation greatly diminished the amount of disturbance otherwise involved seems clear from the cases where the reagent, while attending too exclusively to the work of memorising, allowed the voice to die away and ceased to speak distinctly, thus increasing his power of memorising. The only data of an experimental kind available for the confirmation of this account of the matter are those gained in the course of various tentative experiments. The purely vocal disturbance was in these experiments brought about by pronouncing in their order the series of numbers 1, 2, 3,..... So far as these experiments go, their results correspond very closely to what is found when it is a syllable that is pronounced.

Simple as the act of addition may seem, the effort required to combine it with the process of memorising was extremely difficult—"painful" was the term applied to it by one of the subjects. For its effect was to make it almost impossible to do more than stare in a helpless way at the different parts of the combination of letters presented. The reagent was conscious of the presence of the visual objects, but it was as if their meaning was lost and he was unable to grasp the letters as anything more than mere signs, as if part of their content was wanting. Accompanying this state of mind was a feeling of helplessness, and a conviction of the uselessness for the purposes of learning and recollection of this merely visual consciousness of what was

presented. According to one observer it was during the earlier and easier stages of addition that memorising was really possible: according to others the opportunity for grasping the connection of letters presented itself in the pauses between the beats of the metronome, or at the close of the time of exposure[1], when it seemed possible as it were to snatch part of the series and give it a moment's concentration. In this way short groups of letters, small pictures, could be impressed on the memory, and in this way the full effect of the distraction was not felt; the attention oscillated, so to speak, during the process of memorising. In any case however the total attention together with the ability to reproduce larger groups and a connected series was much lessened. How low the value of the memory would have sunk had the state of distraction involved in each separate step of the addition been maintained uniformly throughout, it is difficult to say.

Reference has already been made to the fact that as we pass to the second and then to the first group, the number of errors of insertion and of displacement increases relatively to the number of letters actually remembered. As regards errors of insertion this statement seems justified, in spite of considerable variations. But in any case this kind of error is not of great importance in comparison with the errors of disorder: they shew with considerable clearness and persistency an increase from the fourth group to the first. The effect of mental distraction may then be said to consist not only in lessening the total area of consciousness available for the reception of new impressions, but in confusing the recollection and thus lessening the power of forming exact associations, which shall enable the reagent in the first place to locate definitely what has been impressed on his memory, and secondly to exclude ideas which did not form part in the complex first presented to him.

In his research on the Association of Successive Ideas, which has already been referred to, Münsterberg comes to the opposite conclusion. In these experiments, which were carried out in order to answer the question whether association through mere succession was possible, letters forming series of varying length were successively presented to the subject. Some of the series were learned with full attention; others had to be learned while at the same time he was carrying out in an audible voice complicated arithmetical operations. The distraction of the attention lessened the number of letters which could be

[1] The latter fact was noticed only when the electric light was employed. It is difficult to say whether it was illusion, or was due to the circumstance that the cessation of light in the incandescent lamp is not quite instantaneous.

retained; according to Münsterberg it could not be the reason why in series including only four or five letters the right letters almost without exception were reproduced, but at the same time were given in wrong order. The real reason lay, he contends, in the exclusion of any opportunity for association by simultaneous contiguity. "The only possible effect of the greater or less amount of attention devoted to the perception of single letters is to cause them to be impressed more or less firmly on the memory."[1]

That the main conclusion regarding successive association—viz., that apart from simultaneous association or connections formed by means of the motor mechanism, it has no existence,—is rendered probable may be granted. But it does not follow either from the theory or from the experimental results that the only effect of inattention is to lessen the number of ideas which can be retained; in fact the suggestion that variation in attention can vary the intensity or completeness with which ideas are "impressed" on memory, without at the same time thereby altering the intensity or strength of the associative bonds between them, seems somewhat improbable. And as regards the actual results obtained in Münsterberg's research there is room for the working of all these factors; the greatest share in the disturbance of order may be due to the cause he suggests, but part also may very well be due to the two factors in attention; inattention or distraction may cause fewer ideas to be recollected, and may lessen the strength with which these are held, but it may also diminish the security and firmness of their associative connections. That it does so is rendered highly probable by the results which have already been brought forward in this paper.

The words Attention and Memory have been used throughout these pages as if they corresponded to definitely and generally accepted conceptions. Practically we know quite well what attention is, though the theory of the matter may be hard enough. It will be most profitable here to avoid theories and simply state what view of the function of attention seems most appropriate to the facts which we have been considering. The facts relating to attention are, as we saw, furnished mainly by the experiments of the first group. And the chief fact we found to be that inattention not merely lessened the extent to which ideas could be taken up and retained in consciousness, but in a still greater degree confused and deranged the associative connections in what was actually recollected. This again is simply the objective expression for

[1] *Zeitschr. f. Psych.*, I. p. 105.

the subjectively felt inability of the reagent to apperceive and relate what was presented to him. Through the process of mental distraction, said one of the observers, *Wahrnehmung* was turned into *Empfindung.*

It is in this that the essential operation of mental distraction seems to lie. In ordinary attentive experience each impression, each idea, as it occurs, is met and transformed—to speak in Herbart's language—by a mass of apperceiving ideas which render it known, familiar, recognised, and in doing so relate and associate it with similar experience we have had in the past. It is this mass of apperceiving ideas which enables us so easily without conscious or voluntary reflection to follow and understand some new fact in a science with which we are familiar. And in distraction of the kind we are considering the really effective element seems to be an inhibition of these associative processes which enable us unconsciously to relate and recognise what is presented to us, the effect of this inhibition being to produce temporarily a state to which one may apply the term *Seelenblindheit.* How far these processes are in any case represented in consciousness is another question; probably here, as in many other relations, apperception is to be understood as referring simply to the total indefinite state or attitude of mind, "the feeling of tendency" resulting from the minimal excitation of certain "ideational centres." The essential fact in attention on the other hand would lie, apart from its accompaniments, muscular adjustment and the like, in the strengthening of an idea or impression by the processes of blending and redintegration, those processes which are operative in all learning and knowing: attention on this view of the matter would be knowledge in its most perfect form, that form being attained not merely by positive support and strengthening, but by an inhibition or repression of all that might compete with and distract energy from the apprehension of what is attended to. There do not seem positive reasons, either theoretical or experimental, to forbid the hypothesis that there are degrees of clearness and distinctness in mental states: it seems however equally impossible to prove that an apparent increase in the clearness of an idea or sensation is an independent special process[1], and

[1] In a paper "Über die Schwankungen in der Auffassung minimaler Sinnesreize," *Phil. Stud.*, VIII. p. 365, Eckener asserts that a stimulus can still affect consciousness though quite unperceived and "dark": his proof consists in the observation that when a minimal sound stimulus has become subjectively inaudible, the reagent is still in many cases able to tell when the source of sound is objectively interrupted. That this proves nothing in regard to degrees of clearness in ideas is evident when we

not an illusive appearance due to some change in the associative or emotional complex surrounding it.

When we speak of memory as being a storehouse for ideas, of psychical states impressing themselves, being retained and last of all reproduced, we are using metaphors which are adequate for all practical purposes, and which are about as true as the theories often brought forward as giving the real truth of the matter. On this subject Physiology seems a better guide than Psychology, for Psychology has been too much burdened by its theory of ideas, and by its conviction that the elementary and fundamental psychical processes must be explained in terms of the developed mind. Physiological memory means simply that a given nervous centre has been so changed—how we do not know—by the occurrence in it of a certain set of processes, that when one of these occurs again the others tend to follow. It does not occur to anyone to say that the old processes are reproduced, and that physiological memory is inconceivable unless we suppose that numberless old innervations fuse with a new one, when that new one occurs, and so enable it to start a series of movements over again. But it does occur to psychologists, and is confidently asserted, that such a fusion of old and new is one of the fundamental associative processes. The physiological account of the matter is simple and natural: old psychical states are no more reproduced than are physical states, but similar states are reproduced; these in their turn tend to recall other states, which again had something like them in past experience. The fusion of old and new which occurs in organic memory means that owing to habit or repetition of an experience the physiological processes have become changed: they are modified owing to what has gone before, so that a fresh reaction is correspondingly modified. There seems no reason why, when we speak of storing up and of reproduction of ideas, we should introduce anything more into the processes than we would require were we to apply like metaphors to purely physiological memory.

According to the usual statement of the Law of Association by Simultaneous Contiguity, objects or ideas which have once been present together in consciousness tend in consequence to recur in the same connection. It is obvious that in such statements emphasis is laid on the fact that the ideas have been simultaneously elements of a conscious state, and that the process is one concerned solely with sensory or intellectual

remember that cessation of a stimulus physiologically may have for its first effect an increase of the reaction; e.g., in experiments demonstrating the electrical response of the frog's eye to light, the first effect noted when the light is withdrawn is an *increase* of the response.

experience. Observations made during the course of this research give occasion for some remarks on these two points.

It was pointed out again and again by the reagents that mere perception of a number of letters, mere presence together in consciousness, was useless for the purpose of associating and learning; that unless they were able systematically to go through the series at a moderate speed and with a fair amount of attention, no abiding impression was left on the memory. And the remark suggested by these observations is that those factors which form the real constructive basis of associations are such as are usually recognised merely as helps and supports to a connection which is due to simultaneous apperception. Interest, Attention, Repetition are recognised, though only as modifying factors, as influences which contribute to the efficacy of contiguity. But it is obvious that Interest in itself has no necessary connection with and is not implied in contiguity: Attention again is a factor which as we have seen is of great importance in the processes of associating and recollecting ideas; but that too is not implied in the description commonly given of the nature of association by contiguity. And, so far as the need of Repetition, Exercise, Habit for the formation of firm associative connections is emphasised, it is admitted that mere simultaneity is of little avail. It may well be that the method of entering into one's breast and observing what happens in the play of ideas whose connections have already been formed, has been the reason why a description which applies to so many of our actual associations is taken as a statement of the law of their formation and growth: that description is here taken for explanation seems in any case to be the fact. Ideas which are associated have very often been contiguous;—on the other hand ideas which have been merely contiguous are in the vast majority of cases not associated. Contiguity is indeed a formal characteristic which associated ideas possess: it seems necessary that ideas should form parts of one conscious state before they can be associated. It is however in these dynamic factors, Interest, Attention, Repetition, that the real causes, the formative influences, are found; it is this which should form the matter of any law intended to state the nature of the processes by which our actual associative connections are built up.

The second set of facts points to the need of emphasising, in our account of Association by Contiguity, the part played by the agency of the motor system. That habitual activities, or any acquired physical ability, illustrate the operation of contiguity has long been recognised. But in order to understand the formation of associative connections in the more purely

sensory or intellectual sphere, it seems necessary here also to seek an explanation in the functions of the motor mechanism. How that operates may not be clear; the subject, whose importance has been recognised perhaps most by Bain, Stricker and Münsterberg, has not been studied with sufficient exactness either psychologically or physiologically. But this factor offers itself without straining as a reason why visual objects presented in succession should refuse to relate themselves as members of a series when the help of articulatory innervations is withdrawn, and why the reagents in these experiments insisted so strongly on the necessity of going over the letters serially and systematically, and on the great hindrance caused by disturbance of the vocal mechanism. These facts it would seem cannot be explained except by supposing that, as purely sensory objects, the associative tendency of the presentations was much less strong than where the reagent was left free to combine both sensory and motor elements in the process of memorising. And, if this be so, it will only be the psychical expression for the conviction which is gaining ground in Physiology that there are no purely sensory nervous centres, but that what bears this name really subserves a double function.

Münsterberg, in the paper from which I have already quoted, states that no special or predominant type of incorrect order was detected in the answers which were given in his experiments. Bolton[1], experimenting on school-children to whom he read over lines of five to eight figures, found that among the errors that of inversion was prominent. Errors of inversion were not infrequent in the experiments already described; still the number was not at all remarkable. Another type of error which occurred fairly often is more interesting; it consisted in letters changing their places in the lines so that, for example, the first letter of one line would take the place of the corresponding letter in another, this second letter then occupying the place of the first; in another instance the first letter of the last line is followed by the second of the middle line, by the third of the last line, and then by the fourth of the middle line. Whether this is to be interpreted as a disarrangement of a visual picture it is impossible in the absence of direct experiments to say. The question still waits solution, what sort of error is committed when each element in memory, visual sensations, auditory sensations and so on, is isolated and its capabilities tested. To such a task the method applied in this investigation seems specially fitted.

[1] The Growth of Memory in Schoolchildren. *Am. Journ. of Psych.*, v. p. 363.

The number of cases where similar letters were confused was too great to allow of the supposition that the confusion was due to accident: it was however not great enough to allow of a definite account of this tendency. Letters similar in sound, such as *m* and *n*, or *t* and *d*, were interchanged: similarity in shape seemed to be the reason why *h* and *k*, *u* and *v* were confused. It may well be that with such letters as *t* and *d* the reason of the interchange lay also in the easy transition from the one position of the vocal organ to the other. What letters are most liable to confusion and what disappear most readily, together with the relation of these facts to the phenomena of aphasia[1], are matters of interest, but can be studied only by extended and precise experiment. A series of experiments was begun to test what effect audible pronunciation of the letters to be learned had upon the memory: it was however only carried far enough to shew that probably very great individual differences exist in regard to the help or hindrance which such express articulation occasions in the effort to memorise.

It is plain that one great drawback in the results gained first by Ebbinghaus, and next by Müller and Schumann, in their investigations on memory, is that the work of memory is formulated in terms of time only, and that a qualitative analysis of memory is still to seek. It is obvious that results into which visual, auditory, motor and other elements enter as unknown, though probably relatively constant factors, can form only the first step in an account of memory. We have still, as was pointed out before, to find out the capabilities of these various factors and to shew further what changes they undergo in the gradual decay of memory. A few observations regarding the various factors may be adduced from the foregoing experiments. In the experiments of the last group the memory image seemed to be a somewhat indefinite complex of various factors: as the distracting activity became more difficult, and the aid given by articulatory innervations grew less, the observer had to depend more and more on the visual consciousness. Auditory ideas, as is intelligible, came little into play: they were indeed said to be present, but it is doubtful whether sensations connected with the organ of speech were not mistaken for them, a confusion which seems particularly easy when the two elements are present only in imagination or memory. Motor elements seemed to be present in the process of learning wherever they were not expressly excluded: it was they that lasted longest and enabled the

[1] It might be possible also to establish some relation between such changes and the philological facts embodied in "Grimm's Law."

reagent to recollect when the other sensory images failed. It is not without interest to note the different modes of reproduction of these elements. Whereas with the sensory memory the reagent seemed expressly to perceive and recognise each successive idea that appeared in consciousness, the process in motor memory was automatic or mechanical. The reagent pronounced the letters because an impulse to speak presented itself; often the appropriate movements came one after the other without thought or reflection, and without their being recognised as forming the required elements in the complex that was to be recollected[1]. In some cases what was retained in memory was only a vague general idea of the geometrical shape of the letters—their curves or straight lines—which on reflection might become more definite: in other instances there seemed to be a sort of vague idea of the spatial arrangement of the letters without any definite observable images being present. It often happened that, when the reagent believed himself to be in full possession of a line and ready to repeat it perfectly, he was yet unable when the time came to reproduce any part of it: to his surprise the line simply disappeared. Apparently this often happened while he was engaged in repeating the first letters: during this effort the rest of the memory image seemed to be driven out of consciousness. What the conditions of such a belief and its subsequent effects are, could not be exactly determined: according to one observer K. the basis was a *Gesammtvorstellung*, a sort of all-embracing complex idea in which the parts have an indefinitely felt unity.

[1] Observations of similar phenomena are given by Müller and Schumann, *loc. cit.* §§ 23 ff.

## V.—SIMPLE REACTIONS.

By E. B. Titchener.

The simple reaction-time is the interval elapsing between the mental "receiving" of a sense-impression and the execution of a movement in response to that impression. Its consideration has of late occupied a somewhat prominent place in psychophysical discussions. I propose here, first, to make clear the reason of the controversies which have arisen round this simplest question of mental chronometry; and, secondly, to attempt the proof that the matter at issue is really of psychophysical importance, and that the final settlement of disputed points is for many reasons scientifically desirable.

(1) Ludwig Lange, working in Wundt's Institute at Leipsic in 1886–7 found that the duration of the simple reaction was appreciably different, according as the reagent directed his attention (so far as possible) exclusively upon the sense-impression or upon the movement to be made in response to it. Lange accordingly distinguished two types or forms of simple reaction, the *sensorial* and the *muscular*. He found also that a considerable amount of practice was necessary, if the reagent was to give each type in its extreme shape. Especially is there a tendency towards the shortening of the sensorial form by some intermixture of motor innervation: but the maximal degree of muscular preparation cannot either be attained all at once. The average difference between the two reactions is $0{\cdot}1'' = 100\,\sigma$.

This is the discovery which has led to so much psychophysical controversy. I proceed to tabulate the principal evidence for and against its validity.

(*a*) L. Lange: *Phil. Stud.*, iv. pp. 479 ff. *Sound* reactions. For three reagents, $m. = 125\,\sigma$, $137\,\sigma$, $123\,\sigma$; $s. = 223\,\sigma$, $224\,\sigma$, $230\,\sigma$. Difference: $98\,\sigma$, $87\,\sigma$, $107\,\sigma$. For one half-practised reagent, $m. = 147\,\sigma$; $s. = 192\,\sigma$. Difference: $45\,\sigma$. In the case of several (*zahlreiche*) other persons, altogether unpractised, the time-difference was found to exist without exception. Wundt quotes individual series of figures for *electrical-cutaneous*

and *light* reactions from the as yet unpublished continuation of Lange's investigation (*Phys. Psych.*, 4th ed. II. p. 311). *Cutaneous.* For one reagent, $m. = 105\,\sigma$; $s. = 213\,\sigma$. Difference: $108\,\sigma$. *Visual.* For two reagents, $m. = 172\,\sigma$, $182\,\sigma$; $s. = 290\,\sigma$, $291\,\sigma$. Difference: $118\,\sigma$, $109\,\sigma$.

(*b*) G. Martius: *Phil. Stud.*, VI. pp. 167 ff. *Sound* reactions. For two unpractised reagents, $m. = 130\,\sigma$, $172\,\sigma$; $s. = 179\,\sigma$, $242\,\sigma$. Difference: $49\,\sigma$, $70\,\sigma$. The practised results of one of these reagents and of the writer (p. 210) cannot be appealed to, as the conditions of reaction had been modified (p. 211). Even with the modification, however, which greatly curtailed the sensorial time (changing it to a 'central' type), the latter proved invariably to be longer than the muscular.

(*c*) G. Dwelshauvers: *Phil. Stud.*, VI. pp. 217 ff. *Sound* reactions. The tables of this observer are too lengthy to quote. I cite his summary: "The distinction drawn by L. Lange between the sensorial and muscular reaction.....has proved entirely valid throughout my experiments. The difference is so considerable, that the shortest sensorial time exceeds the longest muscular by $60\,\sigma$" (p. 229).

(*d*) Lange's discrimination of the two reaction types suggested to O. Külpe the thought that the quality of the psychophysical disposition would not be indifferent in the case of wholly automatic movements or coordinations. Hence arose the series of articles on the simultaneity of movement: *Phil. Stud.* VI. pp. 514 ff., VI. pp. 147 ff. (Part III. still to be published). Cf. the author's *Grundriss der Psychologie*, pp. 422 ff.

(*e*) E. B. Titchener: *Phil. Stud.*, VIII. pp. 138 ff. *Light* reactions. For three reagents, $m. = 178\,\sigma$, $181\,\sigma$, $182\,\sigma$; $s. = 260\,\sigma$, $266\,\sigma$, $279\,\sigma$. Difference: $82\,\sigma$, $85\,\sigma$, $97\,\sigma$. Seven participants in this investigation were found to be incapable of reacting with any degree of constancy: their results were therefore not employed.—Cf. *Am. J. of Psych.*, VI. pp. 242 ff. *Sound* reactions. Four observers showed the typical difference with the ordinary key. Of eight tested with the Cattell lip-key, one was not educable; two gave central times for sensorial; and one could not be relied upon for constant results. The remaining four showed the typical difference. Of six tested with the Dessoir finger-key, two were not educable, and one gave central for sensorial times. Three, therefore, showed the typical difference.

(*f*) J. McK. Cattell: *Phil. Stud.* VIII. pp. 403 ff. *Sound* reactions. For two observers no difference was found ($105\,\sigma$, $105\,\sigma$; $105\,\sigma$, $108\,\sigma$ or $105\,\sigma$). *Cutaneous-electrical.* For two observers, no difference ($142\,\sigma$, $142\,\sigma$; $119\,\sigma$, $121\,\sigma$); for one, the muscular time exceeds the sensorial ($281\,\sigma$; $201\,\sigma$; dif-

ference 80 $\sigma$)! The first and third reagents were practised.—Cf. *Psych. Rev.* I. p. 542, and I. p. 165 (no difference for two observers; muscular time exceeds sensorial for reagent mentioned above: all practised).

(*g*) J. J. van Biervliet: *Phil. Stud.* X. pp. 160 ff. *Sound* reactions. The results of eleven observers are communicated, all under the rubric 'sensorial.' Two sets seem really sensorial; five central; four muscular. The mean variation seems in every case to be sensorial. The reagents were apparently not practised at all in muscular reactions.

(*h*) J. M. Baldwin: *Senses and Intellect*, p. 113. "If the attention be fixed upon the reacting sense rather than upon the receiving sense, the time is shorter....This I found in my own experiments before seeing reference to N. (*sic*) Lange."

(*i*) M. Dessoir: *Arch. f.* [*Anat. und*] *Physiologie*, 1892, p. 311. Temporal relations of *contact* and *temperature*, and of the latter and *pain*. Of eight reagents, not one showed the sensorial-muscular difference. But the writer expressly states that they were not recommended to concentrate the attention exclusively upon impression or movement: "to react sensorially or muscularly" in obedience to such a recommendation "would be to react wrongly." "The true reaction stands midway between the two extremes." And the rubric for it (p. 312) reads just as does Martius' rubric for 'central' times. But if the observer is asked definitely for central times, it is not strange that he should avoid the sensorial-muscular extremes.

(*k*) C. B. Bliss: *Yale Studies*, I. pp. 1 ff. *Sound* reactions. One reagent, practised exclusively in sensorial attention. Particular efforts towards the muscular form reduced the time from 140 $\sigma$ to 100 $\sigma$, and from 142 $\sigma$ to 111 $\sigma$. "More often the time was lengthened. It seemed very difficult to overcome the habit of turning the attention toward the ear" (p. 38).

Here are ten witnesses. Six are positive; four more or less negative. But of the latter (*i*) is put out of court by his own evidence, and (*g*) and (*k*) by the fact that practice in muscular times had not been had. There are left the four observers of (*f*). Professor Cattell himself is so exceedingly practised a reagent, that one may suspect automatism in his case[1]. We have cases, again, in which the muscular time is the longer, recorded by Dr Martius[2] and Dr Bliss. The latter two writers offer an explanation of the phenomenon. Dr Martius refers it to the novelty of the stimulus, and the consequent inability to concentrate attention permanently on the movement. He has

[1] Wundt, *Phys. Psych.*, 4te Aufl. II. 316, 317.
[2] *P. S.*, VI. p. 409.

no doubt that with practice the normal relations of the two times would have been induced. To explain Professor Cattell's result we may adopt the theory that the reagent $D$[1] was naturally or by practice inclined to the sensorial type; supplementing it by the following hypothesis. It often happens that a beginner attends so strongly to the movement, that his hand is too highly innervated: the muscles become cramped, and the movement—instead of being experienced as a *Befreiung*—is more difficult and slower than in the sensorial reaction. This state of things can only be abolished by equalising practice between the two forms. Now plainly, a 'sensorial' reagent, turning perforce to the opposite mode, would be exceedingly apt to experience such an inhibition of movement.

Even the positive evidence, however, points to the fact that by no means every reagent showed the typical difference. On the basis of the whole, I have concluded that the distinction drawn by L. Lange is a valid one, but not obtainable from every observer. "Rather is there required for the work a special kind of disposition or *Anlage*".[2] Professor Cattell—the principal opponent of Lange's view, as we have seen—is a little amused at my '*Anlage*'.[3] He seems to have forgotten that the same point was made by Lange himself[4]; and has been since emphasised by Leumann[5], Külpe[6] and Wundt[7]. James, citing Buccola, suggests it[8]. Bolton has recently urged it very forcibly in a different connection[9]. So that Professor Cattell's sarcastic smile at Messrs. Hill and Watanabe must be made broad enough to include all these other investigators also.

(2) These, then, are the facts. I proceed to my second question:—that of whether the matter at issue is of any real psychophysical importance. To answer this question, it will be necessary to review in brief the functions of the reaction experiment in the science.

($\alpha$) The reaction is the simplest type of a voluntary action. It, therefore, is the material which must be employed in the teaching or acquiring of introspective control of this combination of conscious processes. ($\beta$) The reaction method has been extensively employed for the determination of the duration

[1] At the time of testing, $D$ had reacted to about 2000 electrical stimulations, without knowing of the sensorial-muscular difference: *P. S.*, VIII. p. 406.

[2] *Am. J. of Psych.*, VI. p. 246.

[3] *Psych. Rev.*, I. p. 543.

[4] *P. S.*, IV. pp. 494, 495.

[5] *P. S.*, V. p. 631.

[6] *Grundriss*, pp. 422, 423.

[7] *P. P.*, 4te Aufl., II. pp. 312 ff., esp. p. 321. And *Vorlesungen*, 2te Aufl., p. 298.

[8] *Principles*, I. p. 94.

[9] Rhythm: *Am. J. of Psych.*, VI. pp. 208 ff.

and for the analysis of certain complex mental 'acts': cognition, discrimination, association, choice, etc. Thus, it has been called upon for proof that deduction is psychologically more difficult than induction. Subsumption takes less time than exemplification. To associate a word to a concrete impression occupies a shorter interval than to associate a concrete idea to a spoken name (Cattell, etc.). Other association laws have been confirmed by it: as, *e.g.* that the more immediate the temporal connection of two ideas is, the quicker it takes place (Trautscholdt, Münsterberg); or that the more nearly related an idea is to another, the more quickly does it connect with this other (Trautscholdt). As regards cognition, we have such important results as that the assimilation of a simple word takes no longer a time than that of a single letter (Cattell, Titchener). A fact of this description throws welcome light upon the 'mechanism' of mind. Again, the reaction method has been used, *e.g.* for the discrimination of degrees of tonal fusion. The minor third fuses less well than the major; the time of cognition of the former being constantly, though not very much less than that of the latter (Tanzi). As regards discrimination proper, we find that qualities are distinguished much more easily than intensities (Friedrich, Tischer): the reaction method thus justifying the psychophysical assumption that quality is the most 'absolute' attribute of a mental process, while our judgment of relative intensity is less ultimate, depending on a complicated chain of association. Lastly, that 'choice' takes time, over and above discrimination, is a fact of importance for conative theory[1].— On the quantitative side, we have the time-values of the simple and compound reactions, which we can apply as norms in any particular case. The shortening or lengthening of the simple time is correlated with certain pathological states of the nervous system (Kraepelin, etc.). The times of particular categories of association enable us to classify observers according to intellectual temperaments (Wundt, Münsterberg). And the duration of the reaction, once more, tells us whether a purporting association is a true association or an apperceptive completion (Titchener). (γ) It has been suggested that "a man's reaction will show the influence of his memory type," as visual, auditory, motor or mixed (Baldwin, Flournoy). I do not wish to undervalue this suggestion, in which there may very probably 'be something':—Professor Cattell genially alludes to it as the discovery of a kingdom, while my students' verification of the sensorial-muscular difference is a search for asses. But there will probably be difficulties in the way of the acceptance of the

[1] See Wundt, Merkel and Kraepelin, *P. S.*, x. pp. 485 ff.

criterion as universally valid. For instance, I have myself cultivated the visualising power to a high degree, and have learned in the course of extended cutaneous investigation to control it pretty thoroughly. Yet my visual simple (sensorial) times, as is shown by several tests, are not shorter than the normal; nor is my auditory reaction longer. The muscular times, in both cases, are also normal. ($\delta$) It has been proposed to use the reaction-method for the determination of the duration of sensation. But the proposition has many difficulties, theoretical and practical, to contend with. ($\epsilon$) Reactions afford one of the best and surest means of investigating the psychophysics of practice. "We may study by their help the effects of practice; and not only its effects, but its progress, its distribution in time, and the variations in it which result from the nature of the acts experimented on and the personality of the observer[1]." The same holds of fatigue. ($\zeta$) Again, the reaction-method can be turned to account in numerous ways for the investigation of the attention: in other ways, *i.e.*, than in that which is now *sub judice*, and which cannot therefore be insisted upon. I need only mention such topics as the fluctuations of attention, distraction, etc. ($\eta$) While, lastly, the reaction is employed in astronomy (observation of stellar transits), in physiology (propagation of nervous impulse[2], ocular accommodation, etc.), and, as hinted above, in pathology.

M. Binet seems, then, justified in his statement: *La psychometrie est une méthode générale*[3].

Now why is the settlement of the sensorial-muscular dispute desirable? Let us take in order the functions of the reaction-method which have been just cited. First, training in introspection of action. It is clear, that if there is to be any guarantee of progress in introspection, the experimenter must have some control: things cannot be left entirely to the experimentee, who is to be educated. I have elsewhere attempted to show that the sensorial times furnish such a control, while muscular times do not[4]. I will not here repeat the arguments adduced: they are all taken from actual experimentation. If they hold, it is very desirable that the sensorial form should be especially practised. Note also, that in the opinion of those who accept the sensorial-muscular distinction, the change of time-value as answer to the command to vary the direction of the attention is proof that the observer has his voluntary attention so far under control.

[1] Binet, *Psychologie expérimentale*, p. 127.

[2] Partially discredited by Professors Cattell and Dolley; *Psych. Rev.*, I., pp. 159 ff., esp. p. 168.

[3] *Op. cit.*, p. 130.

[4] *Am. J. of Psych.*, VI. pp. 408 ff.

Secondly, analysis and temporal determination of complicated processes. It is clear, again, that the first step here must be the simple reaction. All compound forms imply and necessitate previous knowledge of the simple. When we ask which of the two forms is to be the basis of the further investigation, we meet with divergent answers. James says: "The 'extreme muscular method,' giving both the shortest times and the most constant ones, ought to be aimed at in all comparative investigations[1]." Wundt, while he admits the possibility of setting out from the muscular form, strongly recommends the employment of the sensorial[2]; and insists that the observer must be able to react with constancy in the two ways. Whichever view we adopt, this latter requirement must be made. For, on James' theory, the least complicated complication of the reflex reaction—that, *i.e.*, in which the simplest psychical elements are introduced—will be the sensorial. It, therefore, will be the next stage of practice after the muscular. And, on Wundt's, it is necessary (as stated) that the observer be able to react in both ways; since this is the only warrant that he can control his attention sufficiently to make it worth the experimenter's while to proceed with him to more difficult experimentation. This all from the qualitative standpoint. From the quantitative, as I have said above, the adoption of the one view or the other makes a time-difference of $100\,\sigma$ in the results accepted.

For the study of the psychophysics of practice, the separation of the two forms is highly instructive. The muscular reaction tends to become automatic and reflexlike; this tendency being very much weaker for the sensorial. So with fatigue; the 'muscular' fatigue, when practice has attained its maximum, is principally motor, the 'sensorial' mental.

Attention is debatable ground: and as I hope that my case is already made out, I will not enter upon a discussion of it. It will be readily seen that the comparative psychological value of a distraction, *e.g.*, cannot be estimated, if the reaction-form vary from individual to individual, or with the same individual at different times; even although (and for this we have found the valid evidence to be exceedingly little) the time-values should turn out to be the same in either case.

(3) The psychophysical importance of the controverted issue has now been set forth. I append as postscript a table of the introspective differences between the two forms of the simple reaction, as taught in the Leipsic Institute.

[1] *Principles*, I. pp. 93, 94.
[2] *Phys. Psych.*, 4te Aufl., I. pp. 362, 363; 344; 370.

| *Muscular.* | *Sensorial.* |
| --- | --- |
| (i) Motor attention, expectation, assimilation. | (i) Sensory attention, expectation, assimilation. |
| (ii) Motor strain sensations. | (ii) Sensory strain sensations. |
| (iii) Reflexlike, spasmic movement. | (iii) Willed, slow movement. |
| (iv) Simple perception of impression, with previous act of will. | (iv) Apperception of impression, with consequent act of will. |
| (v) Premature and erroneous reactions. | (v) No mistakes. |

The stages in the theory of the simple reaction, up to 1892, I have already discussed in *Mind*, N.S. I. pp. 216 ff. The more important publications upon the question since that time are as follows: Cattell, *P. S.* VIII., 403; Külpe, *Grundriss*, 421; Exner, *Entwurf einer physiologischen Erklärung der psychischen Erscheinungen*, I., 156. Compound reactions are discussed from the point of view of theory by Külpe, 425; Wundt, Kraepelin, Merkel, *P. S.* X., 485; and Exner, 160. Incidental contributions to theory are made in several of the papers cited above.

## VI.—REALITY AND CAUSATION.

By W. Carlile.

### PART I.

§ 1. *The criterion of truth in philosophical discussion.* To what criterion can we appeal as final in philosophical discussion? Is there anything that, in regard to Metaphysics or to what has lately been called Epistemology, occupies the position that Authority occupies in regard to Theology, Precedent to Common Law, or Experiment to Physics? There is, of course, the criterion of self-consistency. That, however, is only a criterion of sequence. We can show that a writer's conclusions do not flow from his premisses; but what about the premisses themselves? Is there any rule that we can apply that will be generally accepted as decisive one way or another in regard to their validity? There is, we find, one criterion that is frequently applied in the last resort, and often apparently with the tacit consent of all parties. This is the appeal to the natural use of language.

An instance of its application which has become famous, even outside philosophical circles, is that made by Mr. Mill, in his controversy with Mr Mansell, in connection with the question whether Goodness could be attributed to the Supreme Being in any other than its natural signification. "Language has no meaning," he says, "for the words Just, Merciful, Benevolent, save that in which we predicate them of our fellow creatures; and unless that is what we intend to express by them, we have no business to employ the words;" and the validity of the appeal was, in so far, acknowledged by Mr Mansell that, in his rejoinder, he found it necessary altogether to remodel his previous contention. Mr Mill, however, was by no means conscious of the possible universality of application of his own criterion.

Many other instances of the appeal will occur to anyone who has followed the course of any philosophical controversy. Mr Mill, for instance, in support of his view that what Matter really is, is that which resists muscular effort, points out that

resistance is the test which men of science[1] "who have no theory to support" use to decide whether such entities as heat and flame are matter or not. Professor Bain similarly asks, "Is not the real meaning of space simply room for movement?" in support of his view as to the true nature of that conception. When Hume urges that it is from invariable antecedence and from that alone that we derive the notion of Causation, Reid replies that, if that were so, we should call Night the cause of Day; and Mr Mill so far acknowledges the validity of this appeal to the use of the word Cause in its natural meaning, as to alter the definition of it from the "invariable antecedent" to the "invariable unconditional antecedent." It will be said, "Why, this is but the familiar method of trying a Theory by its application in an individual instance, which is common both to Metaphysics and to Physics, as well as to the affairs of practical life:" and so it is, but with this important difference, that what stands for fact in Metaphysics is the converse of that which stands for it in Physics or in practice.[2]

To take an example; when Hamilton and Mill both tell us that the vulgar think they see the sun, but the philosopher knows better; he knows that what he sees is only its image on the retina, and that no two people see the same sun, how are we to decide whether they or the vulgar are right? Open our eyes and look at it, or, to make sure that there is no illusion, turn to our neighbour, and ask him, does he see it? That would be the appeal to objective facts. But, of course, in that aspect, the proposition that we "see the sun" is not called in question. What is called in question then? Plainly, nothing but this, whether we rightly apply the word "see" to what happens. The facts are granted. The sole question that remains to argue about is the propriety of the application of the word. My contention is, that there is no possible criterion which we can apply to decide this question except the criterion of its common use. In the meantime, it may be said, in regard to this particular case, that if we define "seeing" as "having a visual sensation simply," then the philosophers are right; we do not see the sun. If, on the other hand, we define it as "having a visual sensation combined with inferences that localize and classify it," then the vulgar are right, and we do; and, as unclassified and unlocalized sensations belong to the region of the unconscious, it is quite certain that by the word "see" we cannot mean them.

[1] The appeal to "those who have no theory to support" occurs frequently in his pages. Cf. *Logic*, vol. i., ed. 3, p. 344 note, and *passim*.

[2] The difference between the two is the same as that between the point of law and the question of fact.

§ 2. *The proof of facts and the constitution of conceptions.* How the appeal to common use may be justified will be best seen by regarding the process by which an individual fact or thing is brought under a general conception, and comparing it with that by which the general conception itself has been, in the first instance, constituted. Suppose we are at sea, and there is land ahead of us; we wish to ascertain whether it is an island or not; we sail round it, and then decide that it is. We have here the conception of Island ready made to compare with the individual thing. Let us suppose ourselves, however, not, as yet, to have had this conception; how do we acquire it? We sail round the land and then give the name "Island" to such land as it—land that can be sailed round. It will be seen, then, that the process by which we prove that an individual thing comes under a conception is the very same process by which we have, in the first instance, constituted the conception itself; and, in this, I think, we have the key to the solution of many much-discussed problems. In the secondary instance, when we have the conception already formed, and have to compare an individual instance with it, there is room for doubt and argument. In the primary instance, where there is the conception simply standing alone, there is nothing to doubt or to argue about. If we take the notion of doubt which is applicable to the one, and apply it to the other, we do something analogous to that which is done by the wild-cat metaphysicians who take the notion of dimension from the three dimensions of space, and apply it to what they call a fourth, they, at the same time, attaching no meaning whatever to the words they use.

It may be said, though, of course, the notion of doubt has no application to the conception of Island standing alone, it has a possible application to the question whether the term "Island" is rightly applied to land that can be circumnavigated. Granting that it has, we ask in what other conceivable way is this doubt to be set at rest except by an appeal to the "convention that underlies intelligible speech." The word "Island" is rightly applied to land that can be circumnavigated, because mankind have agreed to attach such a term to land of such a sort. Similarly, the terms "Real," or "Object of the outward world," are rightly applied to those things to which mankind have agreed to attach them; and, further, in all questions raised in regard to them, there is and there can be no other issue at stake but the propriety of this application; and this issue can be decided in no other manner but by the appeal to their common use.

It will be said, "Are the questions raised in Philosophy then

only questions as to the meaning of words?" and I think we cannot escape the conclusion that an unsuspectedly large proportion of them are so. All of them that are known as Epistemological can be nothing else but questions of words. To decide whether any question is a question of words, or a question of fact, we may apply a simple test. We may ask, does its decision bring us any further ahead. When Hobbes urged that all motives of action were selfish, it was answered that, granting that they were so, then we must again divide these selfish actions into two classes, the selfish-selfish and the selfish-unselfish. Hobbes' contention was thus seen to have a verbal foundation only. The same test, if applied to the question, "Is all knowledge subjective?" would seem to show that this question is merely one of words, as, granting that all knowledge is subjective, we should still have to divide it into the subjective-subjective and the subjective-objective.

If, however, it is beyond dispute, as it seems to be, that the natural use of language may, in the last resort, be appealed to with general acceptance as the final criterion of philosophical truth, we are met with this difficulty—that the popular use of language is accused, and, beyond all question, justly accused, of being a fertile source of philosophical error. The fact that it can be, at the same time, the last criterion of truth, and a fertile source of error, presents a problem which seems to demand solution. The best way of approaching its solution will perhaps be to take some of the words expressive of elementary notions, such as "Reality," "Identity," and "Causation," and enquire what is their natural use, and how we can assure ourselves that it is both natural and legitimate.

§ 3. *The type instance of Reality.* It is quite certain, on the one hand, that no one can give us a definition of Reality, and equally certain, on the other, that all of us who use the word intelligently know what we mean when we use it. We can thus, it appears, know the meaning of a word without being able to formulate it, as we can play a tune without knowing anything of the theory of music. How, then, did we learn it, if not from a definition? By an object lesson. The denotation, it has been truly said, precedes the connotation of words. If I cannot define for you the meaning of "Reality," I can, at any rate, point out to you something that is real. Suppose, for example, that I say to you—a Galatea born yesterday—"This pen that I hold in my hand is real." The pen may thenceforth be looked on as, for you, the type instance of reality. All other things will be felt to be more or less truly real according as they embrace or do not embrace the attributes of the pen. Our first investigation into the nature of reality might therefore

properly take the form of enquiring what is it that happens when we thus first learn the signification of the word. In the first place, it is plain, there must be intercourse. The solipsist standpoint is wholly inadmissible. The sensations of an isolated being would never emerge into consciousness at all. Certainly they never would have names given to them. As to the nature of the intercourse in this particular case, there is, at any rate, this much that happens. There is a group of muscular and tactual sensations peculiar to me, as I grasp the pen in my fingers, accompanied by an auditory sensation simultaneous for both of us, as I say the word "Real;" then a group of muscular and tactual sensations peculiar to you, and an auditory sensation common to both of us, and recognized to be similar to the former auditory sensation, as you take the pen in your fingers, and repeat the word to show that you understand and concur. The nature of the muscular and tactual sensations have been perhaps adequately analyzed by experimental psychologists. I do not think, however, that this important difference between them and the auditory sensation has been explicitly pointed out, viz. that whereas such sensations as the auditory are open to the experience of an indefinite number of people at once, the muscular and tactual are confined to the experience of one at a time. You cannot hold the pen while I hold it—the same part of it, at any rate—without displacing me. This fact is, I think, the foundation of the distinction between the primary and secondary qualities of matter. It is that which subsequently becomes elaborated into the thought that two bodies cannot occupy the same space at the same time. On it is based the very possibility of the denotation of words, of pointing out anything. The ultimate meaning of the words, "The same thing," as between you and me, is, "The thing that I now lay my finger on, and that you cannot lay yours on without displacing mine." If you could, your finger would occupy the same space that mine occupies at the same time. As vision is a compound of muscular and colour sensations, it holds, in respect of this peculiarity, an intermediate position. I can see a face without displacing you, but not a face strictly in profile while you see it strictly in profile. As a result of this, pointing out, as a means of indicating, comes to be substituted for touching.[1]

If intercourse is necessary in order that the very conception of reality may be built up, it becomes evident that we do not

[1] Though, in my example, I left Vision out of account, for the sake of clearness, and because the notion of reality is as easily attainable by the blind as by others, it is really Vision that, in virtue of its double character, is continually bridging the gulf between us, and as continually constituting the conception of "Object" and "Reality."

get our certainty as to the existence of the external world by a flash of intuition, that it is not what is called a datum of Consciousness. Indeed, a moment's reflection on the nature of Consciousness is of itself enough to make this evident. Consciousness is a thing of the instant. As soon as we reflect, it becomes memory, and no one has yet claimed infallibility for memory. Between the occurrence of any sensation and its reproduction in Memory, there is room for Illusion to step in. The truth is, that we reach certainty about these elementary matters as we reach certainty about any other fact, by cumulative proof; though we do not think of it as "proof" while it is building up the conception, but only when, by the very same process, it is bringing individual instances under it.[1] The conception itself is a complex one. It implies, in the first instance, at any rate, tangibility, as well as the fact of being the subject of the concurrence of others. In respect of this latter element, identity is involved in the meaning of Reality. Inner states, says Lotze, cannot, like material things, be "separated from their original possessor and passed on as they are from hand to hand." It is in this capability of being passed on from hand to hand that both "objectivity" and "identity" primarily consist. I know that a colour or a sound is one thing to me, and another more or less similar thing to my neighbour. How, on the contrary, do I know that an inch measure is precisely the same thing for him as for me? The explanation does not lie in any peculiarity of the primary sensations caused by the inch measure. I could have no assurance, from the nature of the sensations that it produces when pressed against my palm, that they would be, in any sense, the same as those which it would produce if pressed against your palm. Indeed, I might be quite sure that they would not. In what, then, does the sameness consist? In the fact that the measure occupies the same space for you as it does for me; and that, in its ultimate analysis, means simply this, that you cannot hold it in your hand while I hold it in mine. Once we have got the length of finding things which are the same as between us, measurement becomes possible, and thenceforward all accurate quantitative knowledge.

That we get nothing that can properly be called knowledge from intuition is further clear from this, that an intuition is one,—is a unity,—while "knowledge," "belief," "truth,"

[1] This would coincide with Professor Jones's opinion, that "we have no certain fact to begin with" (*Mind*, p. 469). Though when he says that "certainty is only to be found in a consistent view of the world as an organic whole," we ask, "Are none but philosophers certain about anything?"

"certainty," and so on, consist in the correspondence of two things. We may have anticipations *a priori* such as the dread of the monkey for the snake, but we do not call them knowledge till they have been compared with fact and ascertained to be correct. "Having been compared with fact," is, I think, part of the connotation of the word knowledge; and if so, knowledge *a priori* or synthetic propositions *a priori* are nothing else but contradictions in terms.

§ 4. · *The extension of application and attenuation of meaning.* There are some other aspects of "Reality" in its full and typical signification to which I will revert after some brief analysis of this notion of Causation. In the meantime, it may be well to draw attention to the successive transitions of signification which it, in common with very many other words, undergoes. It has been pointed out with regard to the word Acid that, "as experimental discovery advanced, the substances classed with acids have been constantly multiplying, and by a natural consequence the attributes connoted by the word have receded and become fewer." Putting the advance of early knowledge for that of experimental discovery, all that follows is as true of the word Real as it is of the word Acid. We began with the type instance of an outward object which gives us our ideal of Reality, embracing the element of tangibility, as well as that of being the subject of the concurrence of others. We apply the conception next to a sound, to distinguish a real from a fancied sound, and then we have to drop the first element, the tangibility. The full meaning of Real now becomes something given by sense in the existence of which others concur. We may apply it next to the objects of the outward world when not seen, heard, or felt by us, to the flowers that are born to blush unseen, to the world in the ages antecedent to Consciousness, and then we have to drop so important a part of its connotation that the applicability of the word itself becomes a matter of dispute—the great dispute of philosophy. Or, regarding the transition in another direction, we come to the region of the unconscious, to the sensations of babyhood and the lower world, that leave no trace, not even the faintest, in memory. *Unrealized* sensations we naturally call them. They are hardly distinguishable from flat nothing, yet undoubtedly they exist in a sense, as without them nothing else would. Reality, it seems, then, must be regarded as having different degrees, and shading off from full and typical existence into that which can hardly be distinguished from nothing at all. Even an hallucination may in a sense be called real. When Professor James therefore speaks of Reality as being a matter of the point of view; of the reality of the world of sound and light, as being kicked out, for

the man of science, by the reality of the world of vibrations and undulations, it is of some secondary meanings of Reality that he is speaking. Doubt in regard to them has really nothing in common with the Humist doubt as to whether the type instances of Reality are themselves real.

This extension of application and accompanying attenuation of meaning in these elementary words, points out to us where to look for the solution of the problem with which we started, viz. how the natural use of Language can be at once the criterion of truth and a source of error. We shall find, I think, that, when the meaning of the type is in question, language is justly reckoned the last Court of Appeal. Where it misleads the unwary is when he approaches the borderland where the applicability of words is doubtful.

§ 5. *Transition from literal to metaphorical meaning.* I have said that the course which such a word as Real runs is analogous to that which such a word as Acid runs. There is an important difference, however. Acid is, at any rate, always used literally. "Real," "Thing," "The same," "Cause," and such like words, very early in their history, jump from a literal to a metaphorical meaning. I can find no other word for it but metaphorical, though the metaphor is on the part of everyone unintentional, and of most unrecognized[1]. All the facts of the mental world are at bottom thought and spoken of by means of metaphors taken from the material world. One result of this is, that the process of the extension of application in respect of these elementary words is not merely a process of attenuation of meaning, but often rather of the substitution of quite another meaning for the original one. The reality of the truths of Geometry and Ethics, for instance, has only this in common with the reality of outward objects, that both are contemplated as subjects of general concurrence; and this element, it must be observed, the metaphorical realities possess in a higher degree than the literal. Hence arises this remarkable result, that the metaphorical meaning tends to supplant the type meaning as our model of reality; and hence the Idealists, from Plato to Lotze, are able to contend that there are entities more real than the things of the outward world. Such a mode of expression puts in an impressive light the permanency and universality of such conceptions as those of Straightness or of Justice. It is rather, however, the language of poetry than of science. Scientifically there can no more

[1] The result of the law of which Hume makes so much, that we can have no "idea" i.e. no mental image, that is not a reproduced sensation, together with the fact that we are under the necessity of doing our thinking, as far as possible, by means of mental images.

be things more real than those from which we derive the conception of Reality, than there can be things more human than a man, or more canine than a terrier.

All this happens even more conspicuously with regard to the word "Same." A young child takes every man for his father, every horse for the first horse that he saw, and so on. Hence the meaning of the word "Same" very soon becomes extended from continuous occupation of Space to undiscernible similarity[1]. When again the metaphorical transition takes place, we find that all these metaphorical things that we call abstractions, such as Blackness and Straightness, possess the character of undiscernible similarity with themselves at all times in absolute perfection. Hence it comes to be consciously contended, or oftener, unconsciously assumed, that their identity is the only true identity. If we say that it is so, we must at any rate keep it clearly in view that what we mean by identity as applied to them is something altogether different from what we mean by identity as applied to outward objects.

§ 6. *The denotation and the connotation of Everything.* It is clear that all words that denote Everything must have the same connotation. If, with the Pantheist, we say that God is everything, we must say that God, in some of His manifestations, is inert, that He is stupid, that He is malignant. If, on the other hand, we say that Matter is Everything, we must say that Matter is, on occasion, living, that it is intellectual, that it is benevolent. So, if we start from the conception of the world as a current of ideas, we know that there is still a world, and these ideas must possess all its characteristics. Hence the history of Philosophy since Hume has, for the most part, taken the shape of continuous attempts to square this conception with the facts of life. Hence in England, Mill's conception of an Ideal world as one of possibilities of sensation like fire which, in our absence, melt other possibilities of sensation like wax, is very much more like the Real world than Hume's conception of a procession of more or less vivid mental images. In Germany, Lotze, putting "Matter of Ideas" for what we used to call "Object," proceeds to construct a Universe to which little exception can be taken except that it is considered to be symbolic of something else. The modern

[1] The problem how it is that we come to conclude from particulars to a universal finds its solution in this, that we predicate at first by mistake everything that we know of one member of a class of every other. Nature is so constituted, however, that the mistake puts us on the right track. This explains, too, why we class together natural kinds instead of chance universals—say "Sheep," but not "Red things"—which Lotze seems to think requires a special Law of Thought to explain it.

Hegelian, however, like Professor Jones, goes one better, and frankly accepts the full connotation of Reality and nothing but Reality, though he continues to attach it to the term Idea. This seems the less necessary, as Hegel's great conception of the Activity of Thought in Nature is surely quite as compatible with plain Realism as with the Idealism that differs from it in nothing but in name. Idealists, we find, are becoming Realists again, as a Radical party now and then becomes Conservative, not by a change of front, but by a continuous absorption of Conservative elements. Nor is it possible that, in this case, the process can cease till the transformation is absolutely complete.

# VII.—DISCUSSIONS.

## THE PHYSICAL BASIS OF EMOTION. A Reply.

In the September number of the *Psychological Review* Professor James defends his theory of emotion against the various criticisms to which it has been subjected. It seems necessary to make some comment on the answer to my own objections, and also to bring out the full bearing of some statements of importance made in the course of the argument.

The most striking thing in Prof. James' article is the way in which he now defines his position. The theory which has caused so much trouble is after all, he declares, a very unpretending thing. It implies merely that the whole of consciousness, whatever its inner contrasts may be, is dependent on incoming currents (524). It assumes that there must be a process of some sort in the nerve centres for emotion, and it simply defines that process to consist of afferent currents (523). It merely asserts that emotion is not a primary feeling directly aroused by the exciting object or thought but a secondary feeling indirectly aroused (516). The primary effect is the organic disturbance (516), and this is the cause of the emotion (519).

In the *Principles of Psychology*, however, we find statements of entirely different import. "My theory is that the bodily changes follow directly the perception of the exciting fact, and that our feeling of the same changes as they occur *is*[1] the emotion" (II. 449). "If we fancy some strong emotion, and try to abstract from our consciousness of it all the feelings of its bodily symptoms, *we find we have nothing left behind*" (II. 451). "What kind of an emotion of fear would be left if the feeling neither of quickened heart beats nor of shallow breathing etc. were present, it is quite impossible for me to think" (II. 452). "What emotion can there be but the unpleasant nervous feeling itself?" (II. 458). "In such cases the emotion *begins and ends* with what we call its manifestations or effects. It has no mental status except as either the vivid feeling of the manifestations *or the idea of them*, and the latter thus constitute its entire material and sum and substance" (II. 458).

[1] The 'is' appears thus emphasised in the text. Elsewhere I have supplied the italics.

It does not seem possible to reconcile these two conflicting accounts. If the whole thing comes to the bare assertion that emotion follows as effect on the bodily disturbance, all that is maintained is the dependence of the fact on the perception of organic change, and nothing is said about the nature of emotion as such. But if no more than this was ever meant, how shall we explain the explicit statements which occur in the original presentation of the theory? There we have without doubt a definite account not only of the conditioning of emotion but also of the nature of the psychical fact. The emotion, it is stated in one place, *is* nothing but the feeling of a bodily state, *and has a purely bodily cause* (II. 459, see also II. 449).

How far Prof. James has moved will be evident from the fact that he approves of my description of emotion as reaction on cognition and hedonic effect, as feeling in regard to an object. He not only agrees with the sharp distinction drawn in my article between emotion so understood and pleasure and pain, but draws the same distinction between emotion and cognition. Emotion, therefore, is now sharply opposed to ideation and perception; formerly it was described as organic sensation or even as the idea of bodily change.

A further modification of some consequence requires to be noted. Whence comes it, says Wundt, that if a certain stimulus be what causes emotional expression by its mere reflex effects, another stimulus almost identical with the first will fail to do so if its *mental* effects be not the same? To this objection, which recurs in all the published criticisms, the reply is that we must remember the force of association in Psychology. Objects are certainly the primitive arousers of instinctive reflex movements, but they take their place, as experience goes on, as elements in total situations, the other suggestions of which may prompt to movements of an entirely different sort. But whatever be our reaction on the situation, it is in the last resort an instinctive reaction on that one of its elements which strikes us for the time being as most vitally important (*Psy. Rev.* 518). All this is perfectly true, but the objection was urged with such unanimity precisely because Prof. James seemed to exclude these factors the importance of which he now insists on. In the *Principles* it was argued that particular perceptions do produce widespread bodily effects *by a sort of physical influence*, antecedent to the arousal of an emotion *or emotional idea* (II. 457). A passage from Lange was quoted where he says that the emotion produced by an unusually loud sound is a sort of fright, *though it is by no means combined with the idea of danger or in any way occasioned by associations, memories or other mental processes.* Cases were cited to prove not only that we may fear before any articulate idea of danger arises, but also be afraid when we positively know there is no danger (II. 457).

In disowning all this and insisting on the intellectual condition of emotion, Prof. James has materially altered his position. The bodily changes are now held to be determined not by the bare

presentation of the object, but by the way in which the whole situation is regarded. This intellectual regard becomes the all important condition, for in determining the nature of the organic effects it determines the nature of the emotion. The practical identification of instinct and emotion can no longer be maintained. In the case of instinct the bare cognition of the object brings about particular bodily effects, in emotion it is the varying intellectual regard which is active. Hence, in any given case, while only one purely instinctive reaction can occur, many emotional reactions are possible.

Piecing things together we find that while the bodily changes determine the nature of the emotion, they are themselves determined by the intellectual regard. The latter is ultimately the real condition, therefore, and it is difficult to see why its efficacy should be mediated by physical change. The probability surely is that Nature here as elsewhere takes the shortest road, and this *a priori* supposition is strengthened by a view of the facts of the case. While the intellectual condition is unaltered the emotion remains the same; when it changes the emotion changes with it. On the other hand, in any given case the bodily changes may vary within wide limits without affecting the emotion, and in certain cases of anæsthesia organic sensation may almost disappear without any marked result. As the condition interpolated by Prof. James does not seem to serve any special end, strong evidence in its favour is absolutely essential. No satisfactory proof, however, is offered of its priority to emotion in point of time, and in the nature of the case conclusive evidence on this head cannot be forthcoming. In addition, as we have seen, it does not fulfil the first essential of a condition. One expects at the very least that a condition should appear in definite form, when the fact it is supposed to condition is so present.

It will probably be maintained that the merit of this view is that it solves the problem of the physical basis of emotion. Now it is on the *sensation* of bodily change that the emotion follows, as the test case makes clear. In the case required the normal physical changes must all be present, and simply because they are not felt our author expects to find that emotional susceptibility has disappeared. Emotion is not then a direct effect of the physical process, and to say that it is conditioned by sensation does not help in the least to determine what brain process corresponds to the emotional, though the sensation in question be that of bodily change. The sensation of a bodily condition is in this respect of course on the same footing as any other sensation. When Prof. James maintained that emotion was nothing but the feeling of a bodily state, he could with right claim that on his theory the physical basis of the fact was known. He no longer holds this position, and draws a sharp distinction between emotion on the one hand and perception and hedonic effect on the other. He can no longer claim, therefore, that his theory is in any way different from any extant theory on the question of the relation of emotional states and brain states. The

only peculiarity of his view is that emotion is regarded as dependent on two psychical conditions, whereas one is usually considered sufficient. It is not clear then that we should gain anything by adopting this account of the origin of emotion, but it is clear that if things were as here described the state of matters could only be regarded as a freak on the part of Nature.

Despite disclaimers on the part of Prof. James that he ever meant more than the theory we have been discussing, the first version tends to appear very distinctly towards the end of the article (cp. pp. 523, 524, 526); despite explicit assertions that he meant as much, there are expressions from which one might infer that he even meant less. I had pointed out that the admission of æsthetic emotion as a primary feeling unmediated by bodily change was a tacit admission that the theory did not apply all round. Such an objection, we are told, is an *ignoratio elenchi* having nothing whatever to do with the real view which only affirmed the dependence on incoming currents of the emotional seizure or affect (525)[1]. My objection holds whether emotion be regarded as the feeling of bodily change or as the effect of this feeling, and if Prof. James did not mean so much as it implied, the glory of his theory tends to melt into the light of common day. The whole thing reduces itself to the unassuming statement that emotion is dependent on perception. Nothing is said about the nature of the resulting fact, and the intervention of somatic resonance between the perception of the object and the emotion is apparently an eccentricity peculiar to the coarser emotions alone. It appears, however, as if the position were only stated so modestly when the 'subtler' emotions are in view. This last version may therefore be disregarded, especially as the states in question may be included under those mild feelings to which the name of emotion is denied (525). In any case there is no doubt that the theory most prominent in the reply is very different from that originally laid down in the *Principles*, and that it is from the standpoint of the former that all criticisms are answered.

This change of ground has necessarily thrown the greater part of my criticism out of joint. When I strove to shew that there is in every emotional state a unique element distinguishable from hedonic effect and cognition of any sort, I was simply taking up the challenge to produce a spiritual element, an element that is which is not the feeling of some bodily state (see *Principles*, II. p. 455). I did not imply that I had "discovered by introspection a part of the emotional excitement which it was psycho-physically impossible that incoming currents should cause." My implied argument was simply that, if emotion has a unique character as feeling attitude, it cannot be right to describe it as sensation of any kind with or without hedonic colouring.

[1] To support my contention I need only refer to the *Principles of Psychology*, p. 468. The force of my objection is admitted by Mr Garner, who criticises my article in the same number of the *Psychological Review*, and is evidently in sympathy with Prof. James' general point of view.

In another place I urged that, if emotion is merely the feeling of the reflexes and these "vary indefinitely" in different individuals, the emotions must vary also and it is therefore a contradiction to say that the same emotion may have different expressions in different individuals. The reflexes, we are now told, do not vary indefinitely but within limits. Further, they preserve enough functional resemblance in the midst of their diversity to lead us to call the fears and angers of different men by the same name (519). Prof. James is thus committed to the task of determining what are the characteristic expressions of each emotion. When he claimed in the *Principles* that his theory freed Psychology from all bother of this sort, I drew attention to the fact that the task in question was a work of supererogation to any other theory except his own. Since the changes vary so much, the theory evidently can never be securely established until it is shewn that there are constant elements, which invariably accompany a particular emotion, and yet are different from those which appear in the case of other emotions.

The treatment of the various cases of anæsthesia seems to call for some remark. The test case requires a subject absolutely anæsthetic inside and out, who should say, when emotion inspiring objects evoked the usual bodily expressions, that no subjective emotional affection was felt. Prof. James lays stress on some cases examined by Dr Sollier and discussed by him in the *Revue Philosophique* (March 1894). One subject is almost completely anæsthetic, and is dependent for outward perception on hearing and the much enfeebled sense of sight. His psychical state is characterised by apathy, indifference, and extreme emotionlessness. The explanation of this is simple if we look into the matter. The mind of the patient is either asleep or in a dim twilight between waking consciousness and sleep. Things are for the most part not perceived, and if perceived he is not sure of them or able to catch their significance. He is not certain even of his own existence. This may be metaphysically a contradiction but psychologically a fact of wide-reaching consequence. When the saving sense of the reality of existence is gone, it is no wonder that interest in the blurred and uncertain world, which remains, goes with it. It is evident that this mental condition alone would destroy emotional susceptibility even if there were no anæsthesia. When laying down the conditions of this experimental test in *Mind* (1884, p. 203) Prof. James explicitly stated that there must be no mental alteration beyond that of the absence of emotion. Can it be asserted that in this instance the condition is fulfilled? Even as regards the physical state the circumstances are not favourable for a conclusive test. "The entire muscular apparatus is half paralysed so that locomotion is almost impossible." The emotional expressions therefore can never be complete, and in any case absolutely no attention is paid to these by the observer. Nor does the psychical state meet all requirements. The patient has at times a great fear that his daughter may be dead, and it is not even

stated that the solitary visceral sensation remaining to him is present on these occasions. In these circumstances one emotion is of course as damaging as a thousand, and, short of some process of immaculate conception, a physiological theory does not seem to have much explanation to offer[1].

On the other hand a very damaging case is brought forward by Dr Worcester (*Monist*, 1893, pp. 293–4). The patient could hear a little and had the visceral sensations connected with the evacuative needs. Otherwise the anæsthesia was practically complete. Yet "all the emotional sensibilities were present and only a little less vivid than in the unæsthetic state." The only remark Prof. James makes is that certain degrees of visceral and muscular sensibility remained, and as these are the important ones emotionally she may well have felt emotion. But surely it cannot be pretended that this insignificant remnant of organic feeling is always accompanied by emotion, or is capable in any case of playing the part which must be assigned to it in Prof. James' theory. The same organic feeling cannot cause all the different emotions, and the few here indicated cannot vary so much as would be required to furnish a different condition for each separate emotion[2].

A review of all the evidence brings to light the general principle, that the emotional state of anæsthetic individuals is approximately normal or the reverse according as the mental state is nearly normal or otherwise. This has the merit of applying to all the cases brought under our notice. With regard to several of these, on the other hand, Prof. James has no satisfactory explanation to offer[3].

One important point still remains to be noted. Prof. James complains that the discussion tends to become a merely verbal one. Though this is not strictly true, there is no doubt that the word emotion has not got a very definite meaning. This arises from the fact that the theories at present in vogue concern themselves for

[1] In the other cases anæsthesia was provoked by hypnotic suggestion. Apart from the 'fallibility of this method' the evidence supplied by these experiments does not seem to deserve much attention. As Mr Garner says, "we are never sure that we have the full emotional expression in any case, *the indications being rather the other way*" (*Psy. Rev.* 546). Very few observations were made and these refer only to the two emotions joy and grief. With reference to these cases I need only refer to Mr Garner's excellent criticism (*Psy. Rev.* 545–6).

[2] Here it seems as if the presence of some visceral change of some kind is all that is necessary. On the other hand if it be pointed out that organic change unquestionably gives rise at times to a mere local bodily perception, the answer is that the "emotional diffusive wave" is in these cases not complete (*Psy. Rev.* 522).

[3] Prof. James admits in one case that "the inemotivity may be a co-ordinate result of the anæsthesia and not its mere effect." He apparently thinks that, if more such cases were found, the doubt would be in great measure removed. As the mental condition alone would account for the disappearance of emotion in the instance referred to, it is evident that no multiplication of cases would avail.

the most part with an account of the origin of emotion. This seems to be the case, for instance, with the theory which asserts that emotion is a fusion of hedonic effect and cognition. If you point out that emotion has a character entirely distinct from either of the elements mentioned, the "Fusionist" will probably reply that the result of fusion is in every case different from the constituents as such. In consequence of this state of affairs the fact is described in all sorts of ways. Prof. James, for example, tells us that he took for granted without discussion that emotion meant the rank feeling of excitement. The feeling of excitement is, however, merely the feeling of stimulated general activity when this presents a more or less uneven or agitated character. This feeling is not present in admiration, contempt, reverence, etc., and is absent in the case of all deep permanent feelings such as affection, dislike and hate. It may be an effect either of the emotion itself or of the circumstances which excite the emotion. When our general mental and physical activity is stimulated but not to excess, and the result is not an agitation but a harmony, we have that glow or warmth which is sometimes spoken of as an inseparable element at least in emotion. It is not a characteristic of emotion in general, however, any more than excitement. A widow who was described as glowing over her recent bereavement would have a right to feel injured.

To convince ourselves of the present undesirable state of Psychology on this point we need only note the haphazard way in which the emotions are enumerated. As little trouble has been taken to find out what emotion is in itself, no systematic attempt is made to determine what states are emotional. The result is that all sorts of things will be found classed as emotions—belief and doubt; modes of behaviour such as courage and desperation, especially those (like revenge) due to an emotion; surprise, and the shock of any sudden presentation; complex mental states such as envy, vexation, and wonder; pleasures and pains such as æsthetic pleasure and the intellectual pain of contradiction[1]. Hence classification has come to be regarded as an almost insuperable difficulty. The states seem to be more numerous than they really are and certainly more heterogeneous. A false analogy between perception and emotion has also exercised considerable influence. Emotion is of course conditioned by cognition, but the full particularity of the latter does not come into play. If I am injured in any way, the emotion which arises is not essentially modified by the fact that the aggressor had clothes of a certain cut, features of a certain cast, and was of a certain stature. The particular case is always subsumed under some general notion, injustice, injury, impending evil, present good and so on.

It was in view of this state of matters that I attempted to bring out the most prominent element of those states which all admit to

[1] It is not unusual to find the last mentioned states classed as emotions by those who maintain that emotion is a fusion of hedonic effect and cognition.

be emotional, and I hope to be able to shew the practical advantages of this method. Emotion regarded as a form of feeling attitude is connected with a permanent feature of our psychical constitution. It thus ceases to be an anomaly, and can be shewn to play an intelligible part in our mental life. This seems a matter of no slight importance, and a physiological theory will always fail in this regard. It gives emotion a place but not a function in the constitution of our nature.

DAVID IRONS.

---

## THE THEORY OF JUSTICE.

THE strong point of modern *a priori* ethical systems has on the whole been the theory of justice. Powerful attempts, such as that of Hobbes, have been made to derive its formulae and to establish its obligation on experiential grounds, but these have always seemed to leave something unexplained. Among recent theories on essentially the same lines may be mentioned that of W. H. Rolph, in his *Biologische Probleme*—a book to the distinctive ethical point of which justice was scarcely done in a review that appeared in *Mind*, vol. x. 281. A later attempt, in conscious dependence on Hobbes, is Mr Hugh Taylor's *Morality of Nations* (see *Mind*, XIII. 287, 425). This is worked out from the point of view of the special student of society; Rolph's starting-point being rather that of the naturalist. The essence of the doctrine in all its expressions is that the formulae of justice are the result of a conflict among societies, or among individuals; and that they are fundamentally "contractual," and suppose, in their abstract expression, the equality, in the particular relations involved, of the persons contracting. The formulae, when we appeal, as we must finally, to the ends for which they exist, have an egoistic reference. Their justification is that the interests of the individual are best attained by observing them in all cases.

Although there is a large portion of truth in this theory, it cannot quite maintain itself on its ground of pure egoism. When we suppose the rules of justice established by convention, we have to bring in some element of sympathetic imagination, or some intrinsic social character of men, before we can effectively get our formulae realised in action. Purely egoistic social units neither could nor would consistently practise the rules of justice. These rules, if we allow their partial origin in egoistic conflict, must somehow be attached to the sympathetic impulses that issue more directly in another class of virtues. Thus Hume, deducing the virtues of benevolence directly from sympathy, was able to incorporate in his ethics, with some modification, the theory of the egoistic origin of justice. According to Hume, in a society of which all the members were perfectly benevolent, justice would be superseded. It has its

true place in a society of which the members are neither wholly selfish nor wholly sympathetic.

If, however, we put justice in a lower place, then we are reducing to a subordinate rank a virtue that seems clearer in its obligation than any other. This is the point that can always be made by the *a priori* thinkers. The experientialist may indeed avoid part of the difficulty by taking the question on psychological instead of on distinctly ethical ground. According to the *a priori* moralist the formulae of justice are expressive of certain objective relations, and indicate the rule to be followed apart from any consideration of consequences. They have an immediate and intrinsic reasonableness. The equalities and proportions they require are something that ought to be apart from any end beyond themselves. The experientialist, on the other hand, cannot admit that they are obligatory in themselves and apart from all consideration of ends—that is, ultimately, apart from all subjective feeling in any individual. He may, however, give a psychological explanation of their peculiar characteristics. Their appearance of being specially obligatory may be explained as the impress left by the coercive action of the State in enforcing those moral rules that are necessary for its preservation. Their special clearness may be regarded as an aesthetic impression due to a certain quasi-mathematical character they have. The real reason why they have this character is, it may be said, because, in questions of distribution, we must have some fixed rule, and it is easiest to take that which is intellectually simplest. As a psychological fact, there is a certain pleasure in contemplating the relations the rules of justice suppose, and a certain pain in contemplating their derangement, quite apart from all consideration of consequences. Ethically, any formula would be good that could be got to work, but a formula not admitting of sufficient abstraction and generality fails to impress itself aesthetically. In themselves the laws of justice are simply one set of rules among others, specially important in view of the ends to be subserved by them; but, in pure ethics, the aesthetic character they derive from their simplicity is not to the point.

Still, after all psychological explanations, an answer has to be given to the rational question why the rules of justice ought to be observed. The experientialist must at last fall back on the position that justice owes its peculiar place in ethics in some way to the end for which it exists.

One great gain that has come to ethics from the theory of evolution is that the necessity of a social basis has been made clearer than it ever was before. Without social conservation no other end can permanently be attained. Hence the virtues by which the social organism is preserved are the most important of all. On evolutionary, as well as on general utilitarian grounds, this position has been assigned to justice. Because of its special importance for social conservation justice alone, or justice most of all, it has been contended by Mr Spencer, ought to be enforced by legal

penalties. Associations of its infraction with punishment, we may add from Prof. Bain's analysis, cause the appearance to go along with the reality of superior obligation.

Still, it is only on the rougher forms of justice that social stability can be said with truth to depend; on kinds of abstinence from aggression that are scarcely entitled to the name of a distinctive virtue. Mr Spencer has pointed out in his *Principles of Ethics* that the distinctive virtue of justice receives no formulation in the moral codes that have ruled over Eastern civilisations. Compassion, in all its forms, is obviously a different virtue from justice; and so also is strictness in carrying out the precepts of an authoritative code, though this is less obvious. In truth, justice as a special virtue was first distinctly conceived in Greece. Early poets and thinkers made attempts at its formulation. Plato made an exceedingly elaborate attempt, but in the end defined as "justice" something—namely the performance of its proper functions by each part of the State and by each part of the individual soul—which has never in any community been recognised as the distinctive virtue signified by that name. Aristotle returned to the problem, and succeeded in fixing the general conception as something that relates to distributions of social goods, and as taking for its intellectual basis relations of proportionate equality. In the development of European thought, the increased definiteness it has got since has come to a great extent from analysis of legal conceptions.

What emerges from historical consideration is thus not that justice in the distinctive sense is specially connected with the stability of all societies. Some at least of the Asiatic civilisations have been exceedingly stable. Yet in Asiatic societies the equalities and reciprocal obligations involved in the conception of justice have never come into clear consciousness. On the other side, European States, so far as experience can say up to the present, have been less stable than the more permanent States of the Eastern world; but the conception of justice has appeared, and has received more and more distinct formulation. What ground then must the experientialist take if he wishes to bring justice finally into relation with an ethical end, and is not satisfied with its presentation as an abstract formula bearing its own evidence in its aesthetic or intellectual character?

A ground seems attainable in the following way. The science of society may be considered as having reference either to societies so far as they are merely social aggregates, or so far also as they have political structure. In its general part the science of society might be called anthropology, in its special part political history. There is a corresponding distinction among the ethical virtues. Some have a general social reference; others have also a political reference. Over and above his existence as a unit in the social organism, the individual man may be a member of a free State. Now the ethical virtue of justice has always been understood to have a special con-

nexion with political ends. It has never been found possible to treat it adequately without reference to the State. If, taking it as an ethical virtue, we define it as that virtue which, when observed between individuals, tends to the preservation, or to the establishment, of a State of particular type, then we have a ground for marking it off from the other virtues. Obviously it both becomes distinctly defined in States involving relations between political equals who are also free—whether constituting the whole of the State or not—and, when practised, tends to the preservation of such States. Thus we are able to refer it to an impersonal end which at the same time the individual can regard with desire. If happiness is most attainable in a State that is politically free, then the end has the subjective meaning which, for the experientialist, is inseparable from it. A set of objective relations is indeed involved, as the *a priori* thinkers maintain, but they have somewhere as their accompaniment feelings that spring from the activity of personalities. The subjective end being thus definitely assignable, a ground can now be given from the comparison of societies for placing justice above the other virtues. For it is the virtue that tends to maintain in existence, or to bring about, or to extend, the best type of political society. And, as ancient thinkers saw, only in the best type of political society can the best type of individual existence be realised.

T. WHITTAKER.

## VIII.—CRITICAL NOTICES.

*Hegel's Philosophy of Mind.* Translated from the Encyclopaedia of the Philosophical Sciences. With Five Introductory Essays. By William Wallace, M.A., LL.D., Fellow of Merton College, and Whyte's Professor of Moral Philosophy in the University of Oxford. Oxford: at the Clarendon Press, 1894. Pp. cciv., 202.

It seems to be generally allowed, among competent judges, that the most satisfactory parts of Hegel's system are at the beginning and at the end. The Logic, whatever may be thought of its cogency and completeness, is at least a well-compacted system of thought-determinations, which can hardly fail to be illuminating even to those who are not able to accept its conclusions. The Philosophy of Mind or Spirit has in like manner been a source of instruction and inspiration far beyond the limits of the Hegelian school. It is only the intermediate part, the Philosophy of Nature, which has been the butt of Hegel's enemies and the stumbling-block of his disciples. We cannot here pause to inquire whether it is not inevitable, in any system like that of Hegel, that the intermediate part, in which mind is dealing with that which is most foreign to itself, must be the most difficult to reduce to a satisfactory form. It is rather our business to congratulate ourselves on the possession, in a convenient English form, of the general outline of the most satisfactory parts of Hegel's system. In the case of the Logic, indeed, we possess Hegel's maturest utterance. In the case of the Philosophy of Mind, what we have is rather a synopsis of the doctrines that are more fully set forth in the larger treatises on Law, Art, Religion, Philosophy of History, and History of Philosophy; together with a sketch of Hegel's view of Psychology, which is not fully dealt with in any other work (except in so far a part of it may be said to coincide with the *Phaenomenologie des Geistes*).

Prof. Wallace's name is a sufficient guarantee for the excellence of the translation. So far as I have examined it, it seems to be even more successful (partly no doubt because it was more easy) than his translation of the Logic. It is not only an accurate rendering of the meaning of the original, but it scarcely gives the impression of being a translation at all. It leaves one rather with the feeling that Hegel was at bottom an English author, and a good

writer of English to boot. The chief point on which a difference of opinion is possible is with regard to the advisability of rendering *Geist* "Mind" instead of "Spirit." There are of course arguments on both sides; and in his interesting note on the subject (pp. xlix–lii) Prof. Wallace has stated his case very fairly. Certainly the term "Spirit" carries associations with it which one would wish to avoid; and in choosing "Mind" instead Prof. Wallace seems to have been guided by similar motives to those which have led him, in the translation of the *Logic*, to prefer "reasonable" to "rational." In each case a certain mystical association is avoided. But in each case there are counterbalancing disadvantages. "Reasonable" is apt to suggest a reference to an abstract reason standing apart from its object and criticising it. "Mind," in like manner, suggests the thinking processes of an individual consciousness; and, if it is used to express the ultimate reality, it seems to imply a subjective idealism rather than an idealism like that of Hegel. Even the quotations which Prof. Wallace gives from Wordsworth seem on the whole to bear this out. Thus when Wordsworth tries to show "how exquisitely the individual Mind.. to the external world is fitted," he is thinking of the relation of Mind to world in a way that Hegel would hardly allow. Would it not be best, seeing that we have the advantage of the two different terms, to use sometimes the one and sometimes the other as occasion requires? I suspect that some of the difficulty in reading this part of Hegel is due to the use of a single term to cover different meanings. Thus in the more psychological parts of his work the term "Mind" seems best to express what is wanted, while in dealing with Art, Religion, etc., we require "Spirit." But as a general term covering both meanings I confess that I still prefer "Spirit," as being more objective and less liable to suggest a false dualism. And, after all, why should "Spirit" (as Prof. Wallace thinks) suggest 'religiosity'? Has Shelley's "blithe spirit" any such suggestion? Or has the word any such suggestion as used by Shakespeare?[1] *e.g.* in the passage:

> "We all stand up against the spirit of Caesar;
> And in the spirit of men there is no blood;
> Oh, that we then could come by Caesar's spirit,
> And not dismember Caesar!"

Substitute 'mind' for 'spirit' here, and no doubt the lines would scan better; but!—

Prof. Wallace's translation is accompanied, like his translation of the *Logic*, by interesting *Prolegomena*. These are given in the form of five Essays—"On the Scope of a Philosophy of Mind," "Aims and Methods of Psychology," "On some Psychological Aspects of Ethics," "Psycho-genesis," and "Ethics and Politics." Of these the first two and the last are perhaps the most important; but all are

[1] A more plausible objection to the term, as used by Shakespeare, would be that it is frequently suggestive of the old idea of "animal spirits."

extremely interesting, though perhaps occasionally, like the *Prolegomena* to the *Logic*, they have the fault of discursiveness. The way in which Prof. Wallace illustrates his subject from every side—referring indifferently to Herbart and Nietzsche, to Boethius and Münsterberg, to Fechner and Rudyard Kipling—is very wonderful, and gives his work a singularly concrete and living interest, without seriously impairing its scientific value. The wealth of the material, however, makes it difficult for a reviewer to select, and I must content myself with adding a few notes on points that strike me as specially important or interesting.

If any one, not expressly a student of Hegel, were to inquire what it is that gives special interest to this portion of Hegel's work, I should be disposed to direct his attention chiefly to two points. One of these is the attempt at a philosophical treatment of Psychology: the other is the attempt to bring Ethics, Politics and Religion into relation to one another. The former is discussed chiefly in Professor Wallace's second Essay, the latter in his fifth; but sidelights are thrown on them both in several of the Essays.

How far is it possible to treat Psychology as an empirical science? And how far is it necessary that it should rather be regarded, throughout, as a department of philosophy? This is a question which is inevitably suggested by Hegel's treatment of the subject; and Professor Wallace has devoted a good deal of attention to it. Some writers (*e.g.* Dr Paulsen in his *Einleitung in die Philosophie*) appear to hold that there is, properly speaking, no such thing as philosophy, but only a philosophical way of treating the particular sciences.[1] According to this view (unless I am misrepresenting it) knowledge has no centre. We start, as it were, from various points in the circumference; and our view becomes philosophical only in so far as we relate these points to one another in a more or less systematic whole. Thus, I suppose, every science (Psychology among the rest) would be primarily of an empirical nature, and would only gradually approach the philosophical form as an unattainable ideal. But this seems to be a one-sided view. Human knowledge appears to start inevitably at once from the circumference and from the centre. If the particular sciences may be said on the whole to start from the circumference, it is at least equally true to say that philosophy starts from the centre; and if we may regard the various human interests from this point of view, it may be said that every one of them has a two-fold aspect—a scientific and a philosophic. The sciences arise in the effort to coordinate the facts of experience, working from without inwards; while philosophy is the effort to see the significance of the same facts, regarded from the centre. If we accepted this view, there would be two modes of treatment for Psychology as for other sciences—one simply scientific, seeking to ascertain the facts and to coordinate them by means of *axiomata*

[1] Wundt, in his *System der Philosophie*, seems at some points to approximate too closely to this view.

*media*; the other philosophical, seeking to view the material in the light of a central principle. From this point of view, Hegel's Psychology would be related to ordinary Psychology just as his Philosophy of Nature is related to the particular physical sciences. And, broadly speaking, I am disposed to accept this view. But Professor Wallace has urged some forcible reasons (pp. lxi–lxii) for holding that Psychology and Ethics cannot be treated in quite the same way as the physical sciences; seeing that the former sciences deal with "the very centre and purpose of all reality." To this it might perhaps be replied that it is not quite fair to class Psychology and Ethics together in this way. Ethics, being concerned with the supreme end of life, cannot be separated from the metaphysical determination of the nature of that end. But it might be urged that empirical psychology is merely concerned with presentations as they appear upon the stage of consciousness; and that these are simply facts like any other facts. This answer is not ignored by Prof. Wallace (pp. ci–cii), but he does not regard it as a sufficient argument for the recognition of a distinct science of empirical Psychology. And certainly if self-consciousness is the central principle of reality it seems impossible to deny that Psychology is, in some sense, dealing with the central principle, and is consequently within the domain of Philosophy. Here, as elsewhere, "if two ride on a horse, one must ride behind." Either Metaphysic must rest on Psychology, or Psychology must become a department of Philosophy. It seems to me that Professor Wallace's arguments have much force against the attempt (made, for instance, if I understand him rightly, by Mr Bradley) to have a psychology out of relation to metaphysic. After all, any science is empirical only because it cannot help it. Some of the physical sciences, dealing with material, so to speak, on the outskirts of knowledge, not yet capable of being brought into system, cannot help being empirical. But when we are working at the very centre of knowledge, it seems absurd to try to be philosophically unphilosophic—to be empirical from *malice prepense*. All that Professor Wallace says on this point seems to me to be weighty and well considered; and his careful summing up (pp. xcii–xciii), though unhappily somewhat too condensed, may be commended to the attention of all psychologists. At the same time, I am not sure that Professor Wallace has not pushed his criticisms too far. After all, I suppose it is a truism to say that there is no truth but the whole truth. *Any* body of knowledge is incomplete till it is seen in the light of the whole. The misfortune is that *no* body of knowledge can be so seen. And this is a misfortune that attends psychology as well as all other sciences. Besides, unless subjective idealism is the truth, it is surely not quite correct to say that psychology is concerned "with the very centre and purpose of all reality." Though it is nearer the heart of things than any other particular science, it is still not quite at it. It is dealing, as Mr Bradley would say, with a higher "degree of reality" than any other science, but still not with reality as such. Hence I should be inclined to say that the

distinction on which Professor Wallace insists is, after all, only one of degree. Though it is true that psychology, more than any other science, should try to be philosophical; yet a legitimate sphere may still be left in it for a more or less empirical form of study.[1] And I think some parts of Hegel's own work may be taken as illustrations of this truth. At several points in his psychological construction, it seems almost as evident as in his Philosophy of Nature that he is dealing with material which is scarcely ripe for philosophic treatment. This is the case, for instance, with his treatment of animal magnetism,[2] on which, however, his views are given with considerable caution (p. 29 *sqq.*).

I should like to call special attention to Prof. Wallace's section (pp. xcix–cvi) on "Psychology and Epistemology," which seems to me to be one of the best discussions of that vexed topic in brief compass that I have seen. But I cannot enter on that subject here.

I could have wished, in connexion with Hegel's psychology, to have some light thrown on the relation between the section (pp. 47–58) called *Phenomenology of Mind* and the larger work with the same title. Have we here an instance of the double use of the term *Geist*? Is the section in the Psychology a mere Phenomenology of *Mind*, while the larger work is a Phenomenology of *Spirit* in the wider and more objective sense? This appears to me to be the essential distinction. The one discussion is psychological, the other epistemological. The one considers the growth of the individual mind from sense to self-consciousness: the other considers the development of the point of view of thought in general in relation to the world which it apprehends. But I merely suggest this as a point on which one would like to have further light.

So much for Hegel's Psychology. But, after all, it is in Ethics that his greatest triumphs have been won. The general nature of his triumph here has, I think, been admirably brought out by Prof. Wallace at several points in his introductory dissertations (see especially p. clxxxvii). It consisted in the subversion of the merely formal and negative aspect of duty which had been emphasized by Kant. Hegel insists that the good is not the mere good will; it is not simply an inner affair—an affair of the conscience. The true good is rather objective. It is, first of all, good character rather than good will. Then, further, we have to remember that good character requires good social and political conditions. And we have to remember, finally, that the human ideal is not fully realised in any form of social institution, but stretches out into the regions of art and religion. Ethics thus acquire with Hegel a larger and deeper

[1] There may even be room in it for what Chas. Darwin used to describe as "fools' experiments." But on the whole Prof. Wallace's objections to recent experimental methods in Psychology appear to me to be well grounded.

[2] In the more anthropological section of his work, the treatment of the different ages of a man's life (pp. 17–18) seems to me to be in Hegel's worst manner.

meaning than had been previously assigned to them (at least since the time of the best Greek speculation). It is possible, indeed, that Hegel, in his opposition at once to Kant and to the sentimentalists, may have gone a little over to the other extreme; and on the ethical side, as on the metaphysical, the partial return to the starting-point of Kant made by such a writer as Green may not be without its justification. For there can be no true realisation of the objective side without the subjective accompaniment—a truth of which Hegel was of course perfectly well aware. Hegel seemed sometimes, as Prof. Wallace remarks, to avoid the very word 'moral' (*moralisch*); and though of course this does not mean quite the same as it would in English (the Germans having the preferable word *sittlich*, for which perhaps we in English might use 'ethical'), yet it seems to imply a somewhat undue disregard of the subjective side. Ethics, with Hegel, tend to become dispersed into the theory of rights, politics, art, religion; the consideration of the will and the ideal of conduct fall somewhat into the background. Still, if this is an error, it can hardly be doubted that it is an error in the right direction; and English ethical writers have still much to learn from Hegel in this respect. Ethical speculation is a very meagre and ineffective thing if it does not advance into Social, Political and Religious Philosophy.

Some of Professor Wallace's best work in his last essay has reference to Hegel's view of the state. He has here given, as I think, the best vindication that we have yet had of the philosophical wisdom of Hegel's political attitude. It is too often supposed that Hegel's theory of the state grew up, according to the elegant utterance of Fries (p. clxxix), "not in the gardens of science but on the dunghill of servility." He is thought of as a mere rationaliser of the *status quo*. Professor Wallace has shown that, on the contrary, much of what he has written may be regarded as belonging to Utopia, and has urged that perhaps in the end some of his ideas "come nearer the conception of ideal commonwealth than many reforming programmes."

One of the most interesting features of Professor Wallace's treatment of this subject is his reference to two early works of Hegel—*Kritik der Verfassung Deutschlands* and *System der Sittlichkeit*—both edited last year by G. Mollat. These are important as indicating the way in which Hegel's views of politics grew up. Hegel seems to have been specially influenced, apart from his philosophic principles, by the study of Greek ideals, on the one hand, and by the study of the English constitution, on the other. It is curious to note points of resemblance in his speculations to the views of writers so different from himself and from one another as Hobbes, Comte and Carlyle (see especially pp. clxxxii–clxxxiii).

In this notice, it has only been possible to touch in the most cursory fashion on some of the leading points in this fascinating volume. To the serious students of Hegel it makes an important part of his system more readily accessible. To those who are sceptical

of the dialectic method or weary of the labour of the notion it will perhaps be specially attractive on account of the numerous passages in which, as Professor Wallace says, Hegel 'lets himself go.' Some of his most penetrating utterances on religion and life are to be found here. And some of Professor Wallace's own remarks on these matters are scarcely less instructive.

I cannot conclude without expressing some regret that Professor Wallace has not seen fit (as in the case of the *Logic*) to translate the notes as well as the text. Perhaps when a second edition is called for (which I trust will be soon), he may be able to earn additional gratitude from philosophic students by adding these also[1].

J. S. MACKENZIE.

---

*Psychology, Descriptive and Explanatory. A treatise of the Phenomena, Laws, and Development of Human Mental Life.* By GEORGE TRUMBULL LADD, Professor of Philosophy in Yale University. New York: Charles Scribner's Sons, 1894. Pp. xiii., 676.

In 1887, Professor Ladd published his *Elements of Physiological Psychology*; the first manual of the science to appear in English. The work was based, to a large extent, upon the second edition of Wundt's *Grundzüge*. It was well received by the technical journals[2]; and though much of its subject matter impressed the reader as being an exposition at second or even at third hand, it has been distinctly useful to the student of the science and undoubtedly valuable to the science itself.

The present volume—which had far better have been two—is, literally, a weighty production; it turns the scale at three pounds avoirdupois. Though shorter by twenty pages than the *Elements*, it is a considerably lengthier book, free recourse having been had to a particularly fine print for supplementary or explanatory discussions. Its contents might not inaptly be described as "human various"; and this variety renders the reviewer's task especially difficult. Since an adequate examination is wholly out of the question, it may be well to devote the body of this notice to certain general considerations.

In the first place, the author seems to have succeeded very well in the affiliation of his systematic to his physiological psychology. The latter is not intruded upon the reader of the new work, but is, nevertheless, constantly recalled to his mind in its reading. There is, of course, an especially close relation between particular sections

[1] I may take this opportunity of correcting a small misprint in the previous notice of the *Logic*. On p. 396, line 30, for "*Germany*" read "Germanity."

[2] Cf. Professor Cattell in *Mind*, vol. xii. O. S., pp. 583 ff.

of the two volumes: as, *e.g.*, between ch. x. of the *Elements*, and chs. xvii., etc., of the *Psychology*; or, more generally, between Pt. III. of the former and Pts. I. and III. of the latter. But there is quite as much modification as repetition, and the author's claim to have presented a new treatise must be admitted. Secondly, Professor Ladd's retention of the synthetic method is, in my opinion, entirely justified. Wundt naturally kept it in his fourth edition: Külpe has shown that it is altogether applicable for purposes of text-book presentation: and recent terminological developments have been readily accommodated by it. It is the method of more orderly results, and, therefore, possesses a pedagogical advantage; while it is also scientifically honester than its rival. The analyst can smuggle in a *sui generis* process when he will, and evade the question of elements altogether. The synthetist is bound to have his elements clearly defined and adequate, since the whole of concrete mentality must be built up from them.

At the same time, the author's position is hardly consistent throughout. The concrete processes of ideation (ch. xiii.), intellection (ch. xiv.), and attention (ch. v.; cf. p. 289), cannot be described as elemental, in the sense in which sensation, feeling (affection), and conation are. Indeed, it is apparently failure to recognise this fact[1] which has led to the tirade against pleasure-pain on pp. 167, etc. No one denies the experiential difference of the concrete feelings (p. 170): what is maintained is that 'surprise,' 'expectation,' etc., are complex processes, and not mental elements at all (cf. the author's own indication of this, p. 179). Chs. ix. and x. are, in other respects than this, two of the most debatable in the book. That it is possible to attend to feeling as such (p. 170) is hardly admissible; "feelings of relation," in the only legitimate sense of this phrase (pp. 174, 199), are surely psychoses of a higher, not of the first order; 'mixed' feelings (p. 181) enjoy but a doubtful existence; the central indifference point of the affective curve (p. 189) may be regarded simply mathematically; centrally excited pleasures and pains *can* outweigh peripherally excited (p. 199)—else how would civilisation be possible?—etc., etc. The discussion as a whole is neither sufficiently comprehensive nor 'up to date'; although some parts of it (*e.g.*, the sections dealing with the relation of language to feeling) are admirable.

Nor is Professor Ladd's methodology unexceptionable at the other end of the scale of mental development. The concrete mind —and this is one of the dangers of synthesis—becomes, in his hands, somewhat amorphous. Logic is granted a quite unwarranted preference over Ethics and Aesthetics. Logic is really not wanted in a psychology: but if the psychical substrate of logical processes needs elucidation, so also does that of the ethical and aesthetical judgments (cf. chs. xix.–xxii., xxiv.). Again, while the author maintains that his book "abandons even the appearance of retaining the

[1] 'Sensation' is employed as equivocally as 'feeling.' Cf., *e.g.*, p. 150.

old and vicious theory of faculties" (pp. viii., ix.), we find chapters headed 'Memory,' 'Imagination,' etc. (and cf. esp. p. 381). This procedure, which is, of course, traditional, is certainly convenient, but should consistently be avoided. It is better even to replace the term 'Imagination' by some such cumbrous phrase as 'conative connections and disjunctions of ideas,' than to let it stand in a work destined, in part at least, for class instruction (p. ix.). Once more, the relation of complex processes to the elemental is not always clearly brought out; perhaps on account of the equivocal use of the term 'element,' to which I called attention just now. The writer, for instance, takes the newly developed and still developing doctrine of Fusion very half-heartedly. The word is not infrequently employed (pp. 180; 209; 224 'blending'; 554; 592; 601 'blended'); but apologetically, and without differentiation from association (p. 269). Nor is it attempted to present fusion-processes in any order of increasing complexity; Sentiment being treated before Impulse and Instinct, and these latter formally correlated with Desire (p. 602). While Attention, discussed in ch. v. as one of the "most general forms of mental life," does not appear again in the whole volume save incidentally (p. 213, relation to conation; 366, influence on perception; 394, relation to memory). Yet the definition of the act of attention makes it a very characteristic and highly complicated fusion (p. 61). Finally, the elemental 'intellections' of ch. xiv., where they are not merely logical processes, had better have been explicitly, as they apparently are implicitly, regarded as *fundierte Inhalte.*

In the third place, the reader cannot but notice, and may, I think, with some justice complain of a tendency of the author's which has been suggested above, and has led to the criticism of his work as 'tedious,'—the tendency to 'get everything in.' Psychophysical discussions—and some of Professor Ladd's views are more than doubtful—are out of place in a systematic psychology. The burden of illustration, for which Japan is largely drawn upon, is over great: the student would in most cases be better done by if left to think out his instances for himself, and the teacher, if competent to teach, is able to supply them from his own experience. Four of the chapters of Pt. III. might have been reduced to one, by a stricter adherence to psychology proper. And this craving for completeness leads the writer, quite in the analytic manner, to admit 'unique' and 'fundamental' processes (as, *e.g.*, the "spiritual synthesis" of memory; p. 401: the "mysterious fact" of the bipartition of psychoses into thing-references and self-references; pp. 519, 520: the "mysterious form of mentality," belief; pp. 512, 514: the "new form of reaction," time-consciousness; p. 310: etc.), over and beyond the mental elements *sensu stricto.* To set out with a certain amount of bricks and mortar; and to discover, when one's edifice is finished, that it contains features not to be accounted for from the given brick and mortar *quantum*; is really to stultify one's chosen method and to give up all hope of a scientific formulation of

one's data. Professor Ladd, with his emphatic insistance on the scientific character of Psychology (pp. 6, etc.), would be the last to let this hope escape him. None the less, the facts remain as stated; a puzzle to the student, and a stumbling-block to the more advanced reader.

It is the business of the critic to be critical; and there has been a good deal of fault-finding in the previous paragraphs. It would be curious if a psychology of 670 pages could *not* have a good deal of fault found with it. There are two minor points of style which, I hope, the author may alter in a new edition. The first is the frequent and contemptuous mention of an imaginarily rampant psychophysicist (pp. 164, 399, 409, 520, 625): contempt (p. 175) is hardly ever a philosophically becoming attitude, and its expression in language is rarely judicious. The second is the betitling of American workers, whose foreign co-labourers are quoted by surname alone. But, these and other objections duly urged, the reviewer cannot fail to find in the present treatise vastly more excellences than defects. I regard the *Psychology* as a thoroughly good manual: indeed, as much the best of the great series of American psychologies. Did space admit, it would be easy enough to enumerate many points of agreement with for each point of dissent from the author. Although I feel strongly that we have had almost enough of systematic treatises, and that the science at its present stage can be best advanced by a monograph literature[1]; and although I must confess to have begun the reading of this bulky work with some feeling of aversion to its size and to part of its expected contents; I have found in it much of valuable instruction and a full apology for its own existence. I hardly think that it can be abridged and popularised in such a way as to supplant, say Höffding, as a handbook for beginners; but I should regard it, after Sully's *Human Mind*, as the safest text-book for advanced students in English.

I conclude this notice with a brief enumeration of the contents of the book. The Introduction contains two chapters on the definition and problem, and on the method, sources and division of Psychology. Pt. I. (on the most general forms of mental life) deals in three with consciousness and self-consciousness, the so-called mental faculties, and primary attention. I cannot but think that both arrangement and nomenclature are here faulty. Pt. II. (the elements of mental life) devotes three chapters to sensation, two to feeling, one to conation, one to idea, one to ideation processes (association, reproduction, etc.), and one to primary intellection processes (consciousness of resemblance and difference, assimilation and dissimilation, rudimentary judgment, time-consciousness, etc.). The 'local sign' chapter, like those on feeling, is open to criticism. Pt. III. (on the development of mental life) contains chapters on perception by the senses (2), memory, imagination, thought and language, reasoning, space time and causation, knowledge of things

[1] Cf. President Hall, in *Am. J. of Ps.*, VI., p. 477.

and knowledge of self, emotions and passions, sentiments, impulse instinct and desire, will and character, and types and principles of mental development. Extensity is denied to all sensations (pp. 327, 495). It is curious to contrast the author's giving up of an explanation of memory with Külpe's resolute effort, in his recently published *Grundriss*, to grapple with the problems of reproduction and recognition. The evidence bearing upon the psychology of induction and deduction (direction of association, subliminal discrimination, etc.) does not seem to be adduced, either in the reasoning-chapter or (at least, fully) elsewhere. Time, too, comes off rather poorly. The discussion of the will is characteristic, and written *con amore*. In the final chapter the writer very rightly devotes some pages to the sexual difference, as he did also in the *Elements* (pp. 570 ff.). It is a point too often neglected in psychological treatises.

The index (pp. 671–676) is fairly complete; the large print is good, the small—being very black on very white—trying. The volume is much too heavy to be easily handled in class work.

E. B. TITCHENER.

---

*The Theory of Inference.* By the Rev. HENRY HUGHES, M.A. Kegan Paul, Trench, Trübner & Co., 1894. Pp. vi., 256.

Any student of Logic who has tried to make practical use of his science in pursuing more concrete studies must have felt at times a suspicion that its present range is, in spite of the methodology added in recent years, still inadequate. To mention two issues of very different kinds, the occurrence of the New Testament miracles or of modern phantoms and telepathy, and the social arrangements, freedom or slavery, which initiated the line of progress followed by our English peasantry within historic times. These are specimens of enquiries as interesting as those of Physical Science, and for which Logic nevertheless does not offer the same technical aids. In several of its chapters the description of Scientific procedure is broadened so as to meet the needs of the Historian also, but there has not been the degree of distinction in treatment which the distinctness of sphere really demands.

The chief merit of Mr Hughes' book is that it places in clear antithesis the field of Natural Law and the field of History and only just misses becoming itself a methodology of History. If it had been written under the bias of a purely logical interest, if the author had felt the stress of historical problems and had deliberately set himself to supply logical aids, it might have accomplished more. But Mr Hughes' interest in his work is indirect. He began to write a treatise on religious faith. This became "a defence and explanation of the habit of assenting to propositions which are not capable of being demonstrated by one man to another." Then

historical inference being an example of such a habit, he set himself to show and vindicate its peculiarities, and in pursuing this task "it has come to pass that logical inference from its foundation upwards has been made the subject of investigation." Mr Hughes does not intend like many apologists for religion to make use merely of the undemonstrable assumptions of Science. These assumptions he deals with but only sufficiently to rationalize his exposition of logical methods. His aim is to show that historical inference, though based more extensively than Science upon the individual experience of each enquirer and not transferable from one person to another so easily, is nevertheless an invincible habit of Intellect, and "the assurance with which the mind assents to concrete truths in the field of history may be no less intense than the confidence with which it makes deductions in the field of natural law." We shall look with interest for Mr Hughes' explicit application of his results in a future book on religious faith. He can scarcely rescue Faith altogether from obligations to show some veins of reason threading its substance. At any rate he cannot do it merely by using the analogy of History. For although History has and ought to have a bias of procedure distinct from that of Science, I do not think that Mr Hughes will convince his readers that it is altogether independent, or that the historical imagination ought not at least to be chastened by a previous discipline in Science.

About one-third in amount of the contents of the book consists of topics usual in theories of Inductive Inference, Causation, Uniformity of Nature, Inference, Induction and Deduction; the last two representing what would be ordinarily recognized under titles such as Inductive Analysis and Inductive Generalization. Another third expounds some topics which are an addition to current logic, the contrast between the "field of Natural Law" and that of History, the principle of the Continuity of Nature, and the forms of inference, Delation and Illation, which are special to the field of History. These two kinds of content of the book are divided from one another in order of treatment. There is a third kind which is interwoven with the treatment of both the others. The investigation is carried on with explicit reference to Mill's views, and considerable controversies with him occur at the appropriate stages in regard to the empirical derivation of the conception of Uniform Causation, the unification of the several types of Inference, and the application of the theory of probability to circumstantial evidence.

The Inference, of which this book is the theory, is movement from the known to the unknown, and is only made in the light of certain conditions that have to be fulfilled, conditions of relation between the new and the old. These conditions are involved in the conception of Causation, and with this, accordingly, Mr Hughes commences. The explanation of the act of Inference is that the mind possesses independently of Inference the conception of Causation. "It is contended that there is some interval of time,

however inappreciably small, between recognition of the fact that one phenomenon has a cause or effect, and recognition of the fact... that another is the cause, or is the effect." This conception is "in some way an object of immediate knowledge." Further, in order that the more special conditions of inference may be evolved from it, it must have two distinguishable constituents. Effect must proceed from, and not merely succeed to, cause; otherwise, if I understand Mr Hughes rightly, the mind instead of inferring from one to the other, will lose itself amid an infinitude of antecedents or consequents, or will follow the chain indefinitely. And effect must also proceed according to design of nature; it must have a formal as well as a phenomenal origin; otherwise the relation will not avail beyond the limits where it has been observed.

From this richer conception of Causation may flow the two principles which formulate the conditions referred to in the definition of Inference. The first is the Uniformity of Nature. "The conception of the relation of particular effect to particular cause as one of procession from, in accordance with the design of nature, includes the further conception of it as independent of time and place...All similar causes or similar effects produce or are produced by similar effects or causes." This principle emerges whenever we make two of the kinds of Inference, Induction or Deduction. Induction appears to be what is usually called Inductive Analysis and Elimination. It is "the discovery within a selected range of circumstances of a cause or effect by means of comparison and contrast," a way similar to Mill's experimental methods with some reservations. Deduction "consists in ascertaining a cause or an effect by apprehending it to be precisely similar to the known cause or effect of a precisely similar effect or cause." It appears to include not merely the application of inductive truths to new cases, as in ordinary usage, but also the generalization which follows Inductive Analysis, and "transforms the inductive conclusion into a law of nature." And though it thus is a step sequent to Induction, it also occurs in a tentative or hypothetical form in the course of making Inductive Analysis itself, and in this latter place corresponds to the process of Delation which Mr Hughes gives as preceding what might be called Historical Induction or, as he calls it, Illation.

At this point begins the contribution to logical theory which forms the special merit of Mr Hughes's book. The results of Scientific Induction, though drawn from concrete incidents as material, are themselves abstract in their reference. They deal with phenomena that have exact counterparts in other things and places and are sundered from historical connections; with aspects found embodied in incident and not with incident in all its concrete determinations and local and temporal conditions. To reach incident in the concrete we cannot have as a clue that exact similarity between aspects of the new fact and the old which justifies Deduction and Induction. Another relation must be

found; and Mr Hughes finds it in a second logical principle co-ordinate with the Uniformity of Nature.

The conception of design in nature carries with it continuity in the action, and in the grouping, of natural causes. Elemental forces operate throughout all time, and the same special combinations of causes recur. Principles of this kind, I may here note, are not novel in Logic. Similar ones are stated, but with more careful limitation and distinctions, in the latest authoritative version of Empirical Logic, Mr Venn's. Continuity is there treated, to a large extent, as a condition under which Uniformity can be realized rather than as a co-ordinate principle. It bears a similar relation to Uniformity which in Psychology the faculty of Retentiveness is sometimes stated as bearing towards the function of Assimilation. But with an *a priori* origin and an independent sphere of its own, it becomes something more questionable.

The sweep that Mr Hughes allows it we may judge from his criticism of Mill's assertion that our expectation of the Sun's rising to-morrow depends on our confidence that no causes are at work whose sudden conjunction will disorder the solar system. Mr Hughes goes the length of affirming that the law of being of the primeval forces "involves complete immunity from catastrophic disturbance so long as the present order of things, with which alone investigation is concerned, continues to exist," and that we have no right to assume the possibility of the "present constitution of things" failing.

This large demand on our faith in the Continuity of Nature appears to be made with a view to detach the methods of historical inference from those of Science. Mr Hughes proceeds to formulate the method of Delation. This "consists in arriving at knowledge of an event by means of the consideration that it must, in respect of the time and manner of its appearance, maintain the traditions of past experience." Its main importance is as a constituent in a more complex process, that of Illation. Here it appears as supplying the determination of an historical situation in such propositions as these. The cause of an observed event, $p$, is either an $a$ or a $b$ or a $c$ or a $d$, antecedents of each kind having been previously given along with $p$ in experience. Again, an observed antecedent $P$ has as effect either an $a$ or a $c$. Finally, certain observed incidents of $p$, have each sprung from one of a set of alternatives which have only $a$ and $b$ in common. There is an inference now possible. The cause of $p$ is an event of the kind $a$. This inference is Illation: "the discovery of a cause, or an effect, by associating with the phenomenon other facts, and formulating some event which explains them all in congruity with past experience."

I will quote one example to illustrate both the contrast between enquiry in the field of Natural Law and enquiry, which may be concerning the same fact, conducted in the field of History, and the contrast between the method of Induction and that of Illation.

Suppose our object is "to ascertain the cause of John Smith's

cold regarded only as a manifestation of the abstract phenomenon" of taking cold, "we fix upon a number of persons likewise suffering from cold," and by comparing their cases "it may happen that we shall find that all the persons, including John Smith, have lately been subjected in one way or another to unwonted changes of temperature. This being so, unwonted changes of temperature, we more or less confidently conclude, are the cause of the cold from which our friend is suffering. With the particular occasion of his being subjected to them we have no further concern." If, however, we seek to know the concrete cause of a cold regarded as a concrete incident, "we take, let us say, the patient's loss of appetite as an effect presumably proceeding from the same cause as the cold, and his having had a certain hot bath as a remoter cause to which this common cause may be due. Consistently with what we already know of nature we can now fix upon an event which is at once the cause of the particular cold and loss of appetite, and the effect of the particular hot bath," namely, a chill.

The above illustration of Illation does not expressly mention alternative causes or consequences, and I will add another example because it illustrates the formulation of alternatives which Mr Hughes's symbols have in contemplation, and also is specially important in itself. With the statements of a witness in a law court, we may associate as determinative incidents his straightforward manner, indifference to immediate consequences, and earnestness. These incidents may reduce the several alternatives of possible causation to two, accurate sincerity and inaccurate. If we know him to be a person trained in observation we have a cause adequate to produce either accurate sincerity or studied inaccuracy. The explanation of the testimony becomes according to the formulæ of Illation, accurate sincerity.

That Continuity in Nature has such a sweep of truth as to place Historical evidence on a footing independent of the Uniformity of Nature is, it seems to me, an extravagant claim. If the observed antecedent $P$ is identified by some characteristics outside those which on previous occasions have made it the cause of $a$ or $c$, I do not believe that Nature will inevitably favour the historian by attaching these causal items also, or will confine its variations of collocation within limits that will allow a rigid list to be made of the only alternative consequences possible. If the formulæ of Illation are to be confidently followed Delation must not rely for its list of alternatives merely on a 'simple enumeration' of the sequences which our memory gleans from uncritical experience. We may insure ourselves to some degree against nature's vagaries of collocation by knowing that the descriptive characteristics of an antecedent form part at least of the abstract cause of the characteristics of the alternatives, that temperature of the skin has to do with chill, and mental training with accuracy of any man's discourse. And we may further discriminate between collocations, arranging them in a rough scale of permanence, and trusting to

some more than others. Real history must follow the clues given by abstract causal features; its only privilege is that where these fail it may step a little further, presuming on the permanence of collocations, than Science should, and it must combine its clues in a special way. Mill was nearer the realistic description of Historical method than Mr Hughes is, when he made it a sort of pendant to Scientific method, and expected the forms of Hypothesis, Deductive Method, Analogy or Probability to be adapted by each man to his own practical emergencies. And if this is so, the condition, also, under which Mr Hughes allows illative inference to be taken for objective truth, that it must be drawn in a part of the field of History to which the experience of the enquirer belongs, is insufficient. It must be drawn in conformity with Inductive Science. No doubt, however, the logic of history and of practical emergencies should be set forth as a distinct type and form in Methodology, as Mr Hughes has made it. And if instead of controverting Mill all along the line of discussion, he had selected only those points where Mill's recognized disciples and successors still hold with him, and had generally brought the whole discussion into explicit comparison with the body of now current Logic, his book would have been one of the most acceptable.

J. Brough.

---

*Vorlesungen Kants über Metaphysik aus drei Semestern.* Abh. der philol. hist. Classe der Königl. Sächsischen Gesellschaft der Wissenschaften. Von Max Heinze. Bd. xiv. No. vi. Leipsic: S. Hirzel, 1894. Pp. 483—728.

The history of Kant's mental development has recently received marked attention. This interest was stimulated by the divergent analyses given by Ueberweg, Erdmann and Vaihinger. In this particular department of Kantean study the present year has been prolific. Emil Arnoldt has just now brought into book form his masterly essays, on the Kritik and Prolegomena, which have appeared since 1888 in the Altpreussische Monatsschrift, Ed. v. Hartmann's latest volume is *Kants Erkenntnistheorie und Metaphysik in den vier Perioden ihrer Entwickelung.* Harald Höffding has contributed two valuable articles to the Archiv für Gesch. der Philosophie on the *Kontinuität im philosophischen Entwickelungsgange Kants.* Arthur Drews has attempted an exposition of Kant's system from the standpoint of his natural philosophy, and Professor Heinze has brought together for critical and comparative study five MSS. from Kant's lectures on metaphysics.

In 1821 Pölitz edited from two MSS. Kant's lectures on metaphysics held during the winter of 1788—90. This contribution was so far forgotten or ignored that Kuno Fischer makes no reference to it in his two volumes on Kant, while Rosenkranz

and Hartenstein, in their editions of Kant's works, merely allude to it without any apparent appreciation of its essential or historical value. Late in the year 1892 Professor Heinze discovered the MSS. from which Pölitz made his edition. It appears that the editor had taken broad liberties with the MSS. striking out as he tells us "einige wenige Stellen." In addition to these two MSS. found in Leipsic other two have been brought to light in Königsberg, while a fifth MS. is in the hands of Dr Kranse of Hamburg. From their location these MSS. are indicated by the symbols $L^1$, $L^2$, $K^1$, $K^2$ and H. The latter MS. has escaped the notice of both Erdmann and Arnoldt. After critical examination Dr Heinze concludes as follows as regards the date and general character of the several MSS. $L^1$, $K^1$ and H are copies of an original MS. which stood for lectures given by Kant within the years 1775—1780. Arnoldt puts $L^1$ and $K^1$ in the winter of 1779—80 while Erdmann places them as early as 1773—74. The form and matter of these lectures differ so much from the Kritik of 1781 that one is inclined to assent to Erdmann's earlier date, even remembering that the K. v. V. was "written out within a period of four or five months." The dates of the other MSS. fall after the first and second editions of the Kritik, $L^2$ in the winter of 1790—91 and $K^2$ in the winter of 1794—95. It is interesting to note that the author of the Kritik, who will have nothing to do with metaphysics, begun lecturing on this subject in 1770 and continued to lecture every winter semester until 1795, when he laid down his university work; and that throughout this entire period he made Baumgarten's Metaphysics the basis of his lectures. It is evident that the importance of these lectures is considerable, lying as they do on either side of the two editions of the Kritik and covering a period in which elucidation of Kant's development is most desirable. Their value is enhanced by the fact that they were introduced at the time when Kant said he had come upon "great light" and wished none of his writings earlier than 1770 to be regarded as expressing his philosophical views. That Kant himself attached great value to these lectures and desired their publication appears from several letters to Marcus Herz in 1778, and from Jaesche's introduction to Kant's Logic in 1788.

In regard to the form and content of these lectures there is of course essential agreement in $L^1$, $K^1$ and H, as they are copies of an original MS. Here the doctrines of time and space appear in clearer lines than in the Dissertation of 1770, but as yet there is no distinction between the theoretical and practical reason, and no indication of the cosmological antinomy. In $L^2$ and $K^2$ the exposition is more after the Kritik. It is noteworthy that in both series of MSS. Kant is even more dogmatic in his procedure than in the second edition of his Kritik. There is frequently open disagreement with doctrines that are commonly attributed to the critical writings. This dogmatic spirit, manifested just before and after the critical publications, may be accounted for, in part, in that the Professor in the lecture room speaks more from his inner self and for the

guidance of learners, while criticism belongs more to the pen and the quiet of the study. However this may be, these lectures are a remarkable revelation of Kant the teacher, and must tend to modify some of the more rigid constructions given to the Kritik. It is clear from the second edition of the K. v. V. $L^2$ and $K^2$ that the real Kant, like Hume, stood somewhat aloof from his more critical and sceptical classic. In the first series, Kant, following Wolff, subdivides his matter as follows: Prolegomena, Ontology, Cosmology, Theology and Psychology. In the second series the order Theology and Psychology is reversed, probably on account of Kant's increasing emphasis of the practical significance of metaphysics and the crucial importance of rational Theology. With a partial exception of $K^2$ the lines of this subdivision are not very well preserved. This arises in part from mixing pure and applied metaphysics; in part from the freedom of the lecture room and the intensely practical aim of the lectures. Kant tells us expressly: "The main business is morality, this we must guard as the apple of the eye, this is the ground and end of all our speculations and investigations." From first to last God, Freedom and Immortality are the all important ideas. It is to be noted that *Glückseligkeit* plays a far greater *rôle* in these lectures than in his other writings. Now and again it comes to the front as the proper goal of human conduct. Kant's difficulty in attempting to exclude happiness as an end is manifest in the following words concerning the moral imperative: "Sie ist nicht eine Anweisung der Handlung, wodurch wir glücklich werden, sondern nur, wodurch wir der Glückseligkeit würdig werden. Sie lehrt uns allein die Bedingungen, unter denen die Glückseligkeit möglich ist, zu erlangen."

In the ontology of the earlier lectures we find a marked advance over the Dissertation. The matter of the Kritik is presented but in a somewhat different order. The categories are indicated and fixed with the exception of modality, which appears to be troublesome to Kant. He holds that the categories of ontology can be established and that metaphysics is the only true philosophy. In regard to space and time we find what Vaihinger seems to have found from a study of the Kritik, viz., that they are innate ideas which precede and condition all experience. Kant's language is extreme when regarded from the standpoint of the Kritik. Of space and time he says: "sie müssen gedacht werden ehe noch die Dinge gedacht werden." In his later lectures, $L^2$ and $K^2$, we find the same position: "Raum und Zeit kann ich mich daher *a priori* vorstellen; denn sie gehen vor allen Dingen vorher." As to Teleology, Kant evidently wishes to banish it from philosophy but sees no way of completing a system without it. He repudiates the dogmatic idealism of Leibniz as well as the dogmatic egoism of Spinoza as useless in philosophy. He thinks that Plato and Epicurus can be subsumed under one complete doctrine, which postulates behind all secondary causes a Being "das Alles zweckmässig eingerichtet habe." The idea of God is "allerdings ein reiner Vernunftbegriff" * * * "ein ganz unver-

meidlicher Vernunftbegriff." In regard to Theology Kant allows three arguments. The ontological argument is a necessity of the reason and the *a priori* ground of all other arguments. It is subjectively but not objectively valid. The cosmological argument gives empirical force to the ontological. The moral argument alone can give a complete Theology because it has the force of the other two arguments, and, moreover, grasps a divine and eternal line of conduct, in the light of which a moral Theology may be constructed. But Kant holds that the mere law is insufficient and needs to be brought into relation with happiness. The desire of happiness cooperates with respect for the holy law in enlisting obedience to the law without which happiness is impossible. Kant expresses the greatest confidence in his moral Theology. Its principles are 'so necessary that their denial leads one *ad absurdum logicum et practicum*, and to the surrender of one's understanding and freedom; indeed the subjective ground is so certain that nothing which rests upon objective grounds can be more securely established.' In none of his works are Kant's theological views so fully and clearly set forth as in these lectures.

Nowhere is Kant more interesting and surprising than in his treatment of rational and empirical psychology. In the first series he suggests that psychology may soon come to an independent position like physics, but later in $L^2$ and more explicitly in $K^2$ he seems to show empirical or experimental psychology to be an absolute impossibility. In the first series soul is not a mere subjective form but a substance which we know immediately. Kant attempts to prove *a priori* that soul is a substance, and concludes: "Die Seele ist eine einfache Substanz, also kann sie nicht erzeugt werden." This drift does not appear to be quite consistent; although when we consider Kant's doctrine of Apperception in his later lectures it is clear that the above position is not fully surrendered. Both in the first and second editions of the Kritik it is held that apperception precedes every arrangement of ideas, but in these lectures it is treated as self-consciousness, an independent power of the mind not in any way subject to external causes and yet making all distinctions among perceptions. Kant distinguishes pure from empirical apperception and holds that in pure apperception the *ego* is a direct object of contemplation. "The thinking subject must distinguish itself as phenomenon from itself as noumenon, and upon this rests the entire doctrine of freedom. Kant also uses his doctrine of apperception to establish the fundament that truth and falsehood inhere in judgment only, and that judgment is the initial activity of the mind. In all this, Kant seems to drift from the empirical standpoint, and precisely the same is seen in his handling of evolutionary problems. In the early MSS. Kant states the law of biological continuity in about the same language as Aristotle and Locke, but seems to reply to Locke's continuum, and to regard biological continuity and transformation in the evolutional sense as a chimæra in natural science. In $L^2$ Kant repudiates the notion that

reason or understanding can be attributed of the lower animals, and strongly defends both a quantitative and qualitative distinction between man and brute. In the chapter on rational psychology, $K^2$, Kant enters upon the *pro* and *contra* of preformation and epigenesis. Kant seems to be acquainted with the theory of Wolff, and decides against it in favor of preformation, which he holds to be impregnable. This decision is in harmony with Kant's belief in the preexistence of the soul, concerning which, like Plato, Cudworth and Locke, he seems to have very few doubts. Nowhere in these lectures does Kant recognize a transmutation of species or connect man with the lower animals. We cannot regard Professor Heinze's work as other than an important service and contribution to the Kantean philosophy. The most striking points are undoubtedly Kant's devotion to and faith in metaphysical procedure, his pronounced dogmatism before and especially after the publication of the Kritik, and the intensely practical purpose that dominates his entire speculation. The MS. $K^2$ is so valuable both as a general introduction to philosophy and to Kant's own views that we would strongly urge its publication, with introduction and notes by some competent hand.

MATTOON M. CURTIS.

# IX.—NEW BOOKS.

*Apparitions and Thought-Transference.* An Examination of the Evidence for Telepathy. By FRANK PODMORE. London: Walter Scott, 1894. Pp. xiv., 395.

THIS book is to be commended to those who desire a clear and compact account of the method and results of the Psychical Society. It is written in a sober and circumspect spirit, with large allowance for the manifold traps and pitfalls which beset such enquiries, and without the slightest tinge of rhetorical exaggeration. The author confesses in his preface that the evidence "is as yet hardly adequate for the establishment of telepathy as a fact in nature, and leaves much to be desired for the elucidation of the laws under which it operates." He attaches most importance to the experiments in thought-transference; and lays special stress on the peculiarly distinct nature of the results in the case of hypnotised patients. As regards spontaneous thought-transference, he expresses himself with a certain sceptical reserve. "It is not claimed that the evidence reviewed even in its entirety is by itself sufficient to demonstrate the possibility of the affection of one mind by another at a distance. The main proof of such affection is based on the experiments already described, to which the spontaneous evidence so far adduced must be regarded as illustrative and in some degree auxiliary." We gather that Mr Podmore considers the case for thought-transference under experimental conditions as fairly well established. The fact that this is the general impression left on a mind so cautious and acute as his, is worth consideration. Perhaps, however, he does not make sufficient allowance for the loose nature of these psychical, as compared with physical, experiments; it is impossible, or at least very difficult, to take the same liberties with persons as with inert matter. It is difficult to gain an assurance that conditions essentially affecting the result have not escaped even the most careful observation. However, it should be distinctly admitted that on the whole the Psychical Society has made out a strong provisional case for the occurrence of "communication between mind and mind otherwise than through the known channels of the senses." They have supplied to those interested in such questions a reasonable ground and motive for following up their investigations, with the view of either finally arriving at positive results in such a way as to compel conviction in all reasonable minds; or of definitely discovering the sources of their error. In either case, they will have made a substantial and valuable contribution to our knowledge; in the first case, to that alleged department of it which has been called Psychical Research; in the second, to the older study which is known as Psychology.

*An Introduction to Comparative Psychology.* By C. Lloyd Morgan, Principal of University College, Bristol. London: Walter Scott, 1894. Pp. xiv, 382.

"My central object in this work is to discuss the relation of the psychology of man to that of the higher animals, since such a discussion forms in my opinion the best introduction to Comparative Psychology. A secondary object, subordinate indeed, yet forming an integral part of my plan, is to consider the place of consciousness in nature, the relation of psychical evolution to psychical and biological evolution, and the light which comparative psychology throws on certain philosophical problems." Mr Lloyd Morgan writes with all his usual clearness and charm of style. His book is admirably adapted to arouse in the general reader an interest in psychological topics. It fulfils in an almost ideal manner the purpose of the Contemporary Science Series, to which it belongs. But the work has also some claim on the attention of the psychological specialist. Mr Morgan records some interesting and valuable experiments on the mental condition and development of chicks and ducklings hatched in an incubator, and bred in isolation. His results diverge in important respects from those previously obtained by Mr Spalding. Experience counts for more, and connate predisposition for less than Mr Spalding had supposed. But the main feature of the book is the clear and careful definition and discussion of the question whether there is any cogent evidence of *reasoning* in animals. The answer to this question, according to Mr Morgan, substantially coincides with the answer to another: Do animals perceive relations? On the ground of observation and experiment, he concludes that they do not. They have relational experience, inasmuch as the process of consciousness in them involves transition from one object to another. But there is no evidence that they have apprehension of relations as such. The perception of relation is reached as follows. "First *a* is focussed with *c* marginal, and then *c* is focussed with *a* marginal. Then, and then only, when each related term has in turn been focal to consciousness, can we make both marginal, and focus the relation itself." The evidence for the existence of such a process in animals retains its apparent cogency only when the investigator confines himself to loose and partial observation. When for this he substitutes systematic and detailed observation, with experimental control of the conditions, the facts are found to receive their most satisfactory explanation in association based on merely haphazard trial and failure, without insight into the relations involved.

Besides what expressly concerns animal intelligence, the book contains much matter of general psychological interest. Particular reference may be made to ch. xix., on 'Selective Synthesis in Evolution.' One praiseworthy feature of Mr Morgan's work is that he recognises in a thoroughgoing way the significance of marginal or sub-conscious presentations.

*Our notions of Number and Space.* By Herbert Nichols. Boston: Ginn and Co, 1894. Pp. vi., 201.

In this little book a number of experiments on tactile discrimination are described. Varying numbers of pin-points were applied to the skin at varying distances, arranged in varying forms, and the relations of these three categories of distance, number, and figure were investigated. The author argues from his results in favour of the theory that our notions of space extension are wholly expressions of, and have developed from, time extension. The conclusions are arranged at the end of the book in the

form of 109 propositions, or as the author calls them, "laws." One experiment may be mentioned; a suggestion is made to an individual that he is being touched with two pin-points when only one is being used, and an illusory perception of two touches occurs; the individual is asked for a judgment of the distance apart of the two impressions in various parts of the body, and the distance given for each part is found to be approximately that at which two points are perceived as one on that part by the ordinary method of Weber. Unfortunately it is not clearly stated whether these observations were tried on more than one individual.

*Lectures on Human and Animal Psychology.* By W. WUNDT. Translated from the Second German Edition by J. E. CREIGHTON and E. B. TITCHENER. London: Swan Sonnenschein and Co. New York: Macmillan and Co., 1894. Pp. x., 454.

"The present volume is the first of Professor Wundt's writings to be made generally accessible to the English-speaking public. Its comparatively popular and introductory character will, it is hoped, render it especially acceptable both to those beginning the study of psychology, to whom the technicalities of the author's Grundzüge would present very considerable difficulties, and to workers in other departments of science who may desire some knowledge of the methods and results of the new psychological movement" (Translators' Preface).

The second German edition of this work has been recently noticed in these pages. The accuracy of the English version is sufficiently guaranteed by the names of the translators.

*Les Gaspillages des Sociétés Modernes.* Par J. NOVICOW. Paris: Félix Alcan, 1894. Pp. 336.

The author of this treatise is struck by the fact that if all the wealth of the world were equally divided amongst all human beings everyone would be very poor, and he sets himself to discover the causes and cure of this poverty. The causes he finds to consist in three fundamental errors; first, the confusion between wealth and money, giving rise to mercantilism and protection; secondly, the confusion between wealth and property, giving rise to social parasitism and the spirit of conquest; thirdly, a false conception of the universe, or "misonéisme," giving rise to "gaspillages épouvantables." The cure for poverty, thinks M. Novicow, is more wealth; do away with sources of waste, and everyone will be richer. There is of course an element of truth in this, but to judge from this book the author has not yet passed the Pons Asinorum of Social Arithmetic: i.e. that it is unavailing to increase your divisor unless you can also hold your dividend in check. The main sources of waste are to be remedied only by an international federation of European States. The argument is complex. The first step is that those organisms survive which are best adapted to their environment; e.g. if you throw a man into a heated furnace he is not adapted to his environment and will immediately be resolved into his elements (p. 10). The second step is the importance of time in adaptation (ch. III.); the more time we waste the less capable we are of adapting ourselves to our environment. Finally, a great deal of time would be saved by an international federation, and if the European nations are to survive they must recognize their true interests in it. On his way to this conclusion M. Novicow touches upon a good many subjects, including the Manchester Ship Canal, Mr Charles Pearson and

the Chinese, and Socialism. The latter he holds to be valuable only in so far as it makes for the federation; in other respects it is a tissue of contradictions and chimæras.

H. Dendy.

*La Vie Sociale, la Morale et le Progrès.* Essai de conception expérimentale. Par le Dr Julien Pioger. Paris: Felix Alcan, 1894. Pp. 256.

A work treating of social science on strict analogy with biology. As the functions of an individual are to be explained by the nature of his organism, so each society is to be explained by the character of its organization. *Labour* is to social life what *function* is to life in general. "Labour results from the activity of man as function proceeds from the activity of the anatomic elements. Labour moreover is regulated, determined, by the social organization precisely as the functional activity of the anatomic element depends upon the biological organization. The division of labour with all its consequences—differentiation in individuals, variations in social organizations, interactions (répercussions) between members of each social organism—is to be explained by the necessarily variable effect of the distribution of incidental actions or influences, and represents the true source of determinism in social affairs" (p. 27). With this conception as his basis, le docteur Pioger proceeds to its more detailed application; discusses the nature of a society and the social function; propounds a 'theory of socialization' (as equivalent to organization), of sociability (as a species of extended sensibility), of morality (as reducible to the notion of solidarity), of progress (as analogous to biological development); and finally lands out of his very general theorizing in the surprisingly particular conclusions that the suffrage must be modified and the laws of inheritance annulled.

*Mémoire et Imagination* (Peintres, Musiciens, Poètes et Orateurs). Par Lucien Arréat. Paris: Felix Alcan, 1895. Pp. 171.

The second title might here with more justice have occupied the principal place, for the psychological argument of the relations of memory and imagination is but a very slight weft—sound enough however so far as it goes—to a pleasing intertexture of anecdotes concerning artists and of citations from their works and correspondence. The special *raison d'être* of the book, so far as psychological, seems to be to call attention to the large part played by the memory-images (whether motor, visual, or auditive) in creative imagination.

*La Perception Extérieure et la Science Positive.* Par F. Martin, Professeur agrégé de philosophie, Docteur ès lettres. Paris: Félix Alcan, 1894. Pp. 305.

From Thales to Socrates Science investigated the unknowable substance of things. From Socrates to Descartes it attempted to determine their essence. Since Descartes it has devoted itself exclusively to the study of the relations of phænomena in time. If we consider the development of the separate sciences, such as Astronomy, Physics, and Physiology, we find that they have passed through the same three stages in the same order. Thus the various sciences, in the course of their evolution, changed not merely their method but their object. Thales and Democritus sought the *material* cause of all, Aristotle and Socrates the *formal* and *final* causes,

while contemporary men of science seek the *efficient* causes or conditions of phænomena. The reason of this fact is to be found in an intellectual necessity. The development of science follows the same stages in inverse order as the development of perception in the individual mind. M. Martin's exposition of the development of perception is not very clear. Here it will be sufficient to say that the successive steps of the process consist in successive efforts on the part of an identical self-consciousness to maintain its own unity and harmony, as against the chaotic and conflicting multiplicity of its own sense-affections. The book is interesting and ingenious; but the attempt to trace the development of consciousness *a priori* is at least as artificial and arbitrary as that of Fichte.

*L'Abstraction et son rôle dans l'éducation intellectuelle.* Par F. QUEYRAT, Professeur de philosophie au collège de Mauriac. Paris: Félix Alcan, 1895. Pp. 140.

Distinguishes between *passive* abstraction, due to obliviscence and fusion of images, and *active* abstraction, depending on attention. Illustrates the diverse grades of the power of abstraction in different individuals and different races. Refers this diversity to three causes: heredity, natural capacity for attention, and education. Treats generally of the part played by abstraction in intellectual culture, and finally deals with the educational problem, How best to develop the faculty of abstraction. The book consists largely in quotations, and contains nothing that is not sufficiently familiar. Interest in Psychology must be far more widely diffused among the general public in France than in England, if we are to judge by the number of popular books on the subject.

*Les états intellectuels dans la Mélancolie.* Par G. DUMAS, Professeur agrégé de philosophie au collège Chaptal, Docteur en médecine. Paris: Félix Alcan, 1895. Pp. 142.

The author arrives at three principal conclusions: "(1) Melancholy does not exist as a mental entity; it resolves itself, on the one hand, into phænomena of sentience, on the other, into phænomena of arrest. (2) Melancholy may have either an intellectual or an organic origin; but in both cases the motor phænomena are prior to the sentient state or cœnæsthesia; and Melancholy is never anything other than consciousness of the bodily state. (3) Synthesis is the law of the intellectual states (ideas or images) which associate themselves with the cœnæsthesia, and this synthesis is logical. Of these three conclusions the two first are extremely probable, and the last is certain." As regards (1), it is not quite clear what the author means by a 'mental entity.' If he means an idea considered as existing in abstraction from all bodily conditions, he is of course right. But the proposition is surely trivial. As regards (2), the proposition that Melancholy is nothing but the consciousness of the bodily state, is ambiguous. The author connects it with the theory of the emotions advanced by Lange and James. Interpreted in this light, it must mean that the physiological correlate of Melancholy consists in sense-impressions arising from the state of the muscles and of the nutritive and secreting organs. The grand difficulty we find in this view is that it seems to treat the brain itself as if it were no part of the organism, and as if it ought to be as far as possible excluded from all share in its own proper business. Surely it is a viscus as important as the liver or the stomach; and its own state of innutrition and mal-nutrition, with the

consequent difficulty and retardation of all psycho-physiological process, must count as the primary bodily correlate of that pathological condition of consciousness which we call Melancholy. Ordinary melancholy due to such circumstances as the receipt of bad news, has also its primary bodily counterpart in the disturbance of brain-function corresponding to the obstruction of psychical activity. The third proposition seems to us, as to the author, certain. It should be said that the description of the phænomena of Melancholy is exceedingly clear and good.

*La Logique Sociale.* Par G. TARDE. Bibliothèque de Philosophie contemporaine. Félix Alcan, 1894. Pp. 464.

According to M. Tarde, who has a faculty for happy terms of expression, Sociology is a science which has succeeded in being baptized before its birth. On this point many people will be inclined to agree with him. At the same time it is often convenient to have a name in readiness for an expected child, and, although the laws which determine social development are as yet hidden for the most part in the womb of futurity, it is perhaps an advantage to have a name which will in some way suit them when at last they come into the light.

It is M. Tarde's opinion that the arrival of the little stranger, Sociology, has been delayed by the theories of Jurists and Economists. According to these gentlemen the distinctive characteristic of a society is that it is based on service or contract.

On the contrary, says M. Tarde, associations of human beings exist in which contract either explicit or implicit is entirely absent, and in which people hinder rather than serve each other.

A better definition of the fundamental and distinctive social bond is to say that it consists of *Imitation.* In a previous work on the Laws of Imitation M. Tarde has developed this idea with considerable fulness, and he tells us that his opinions on this point have met with a gratifying reception from the philosophic world. The present work is a complement of the Laws of Imitation, and is a further development of his method of interpreting the laws of social life. In order to arrive at an accurate interpretation of those complex phenomena we must discard the fashion of comparing society to a physiological organism.

He does not deny that the comparison has a certain amount of profundity and does something towards clearing our conception of what society really is. But he believes that it may be compared even more profitably with something else—to wit the human mind.

In accordance with this belief M. Tarde contends that Imitation occupies a position in the collective life of society similar to the position occupied by memory in the psychic life of the individual. But memory is only the foundation of our mental structure: the structure itself is the intellect, the feelings, the will. Accordingly in his book on the Laws of Imitation M. Tarde was merely dealing with the foundation on which social life reposes. In his present volume, *La Logique Sociale*, he discusses the social structure itself. Working on the analogy which he traces between social and mental phenomena, M. Tarde proceeds to show that the social equivalents of individual judgment and volition are discovery and invention. After establishing this equivalence and exhibiting its import and bearings, he attempts to trace the laws which determine the movements and manifestations of discovery and invention. In the performance of this difficult task M. Tarde is not content with a mere description of the manner in which discovery and invention have actually

manifested themselves in society; he even attempts to ascertain the only possible lines on which they can manifest themselves.

M. Tarde's method of arriving at this result is by an application of what he calls the rules of individual logic to the complex phenomena of the social world. It is true that in the application of these rules he has to widen what is usually accepted as the scope of logic. But he justifies this step by contending that the sphere of logic is at present too contracted. Logical method should embrace a consideration of the degrees of belief and desire. He considers that both belief and desire—the sources of social phenomena—are real quantities whose variations are essentially if not actually measurable. This enlargement of the field of logic opens up to its methods a wider range of usefulness. When these new methods are applied to elucidating the laws of social life, sociology loses its existing amorphous form and appears in its true character as Social Psychology. In other words the Sociologist is a Social Psychologist. His task is to interpret and discover the laws of the collective mind in the same manner, and to a considerable extent by the same methods, as the student of mental science elucidates the workings of the individual mind.

We cannot follow M. Tarde into details. He has unquestionably produced a stimulating and suggestive book. Sometimes he allows his passion for comprehensive generalisation to carry him outside the contents of his brief. But even where we cannot follow him he always offers food for reflection.

*La Logique Sociale* will undoubtedly enhance his reputation as a philosophic thinker. W. D. M.

*Die Philosophie der Freiheit.* Grundzüge einer modernen Weltanschauung. Von Dr Rudolf Steiner. Berlin. Verlag von Emil Felber. 1894. London. Williams and Norgate. Pp. 229.

Dr Steiner believes that in spite of an apparent tendency to superficial Socialism prevalent in the present age, there is in human nature an abiding and resistless individualism,—a love of freedom—an independence. The justification of this opinion is the *raison d'être* of the Essay before us. On p. 8 Dr Steiner asks, What is the relation of Philosophy to the idea of Freedom, and how far can Freedom be realized by the individual agent? The answers to these two questions form the content of the two main divisions of the work, entitled respectively, The Science of Freedom, and the Reality of Freedom. Dr Steiner devotes the first part to a psychological analysis of the processes subordinate and co-ordinate to the act of willing. Knowing and willing are, he thinks, inseparable functions. Hence there is both a cognitive and a motive factor in all mental states. The opinions of Dr Steiner most relevant to the topic under discussion are to be found in sub-section VII., p. 100, entitled "Human Individuality"—"Die menschliche Individualität." The author here follows the usual lines of modern psychologists, comparing and connecting the percept, the image, and the concept.

We apprehend objective reality by means of perception and conception, while through the mental individual image, Vorstellung, we have the subjective representation of reality (p. 105). The act of subjectivizing through a particular image gives us the apprehension of individuality, makes us conscious, as it were, that the tree we are imagining is a tree we ourselves have seen in the concrete, and not a mere group of abstract attributes. The Subjective is the apprehension of Individuality, as contrasted with the Objective, which is the apprehension of Generality.

With the image of the concrete is associated a feeling of pleasure or pain—desire or aversion. This feeling is purely subjective and clings to the mental image, Vorstellung, while it is totally absent from the objective concept, Begriff. Human desire has for its goal the satisfaction of the individual, while it is quite uninterested in the abstract and general.

In Part II., Section XI. p. 168, we are first introduced to Dr Steiner's distinct enunciation of the philosophy of freedom, which he calls Monism, but which some would designate Anarchism pure and simple. Our author has, however, prepared us for his doctrine at the outset by accepting in Part I. Spinoza's position that freedom means a free necessity, but not a free choice, (p. 12). Hence each man is called upon to develop his own potentiality, as a rosebud is bound to become a rose. The principle of growth is entirely from within; there shall be no external stress, no authority, no subordination, nothing but the unhampered development of infinite potentiality.

The only concession that Dr Steiner will make to popular prejudice in favour of established law, order and government, is the reluctant admission that this complete state of freedom is not attainable at one stride. The human race must be habituated and educated up to the point of development at which it is capable of enjoying perfect freedom, and we need hardly say that this millennium stage has not yet been reached.

*Untersuchungen über die verschiedenen Moralsysteme.* Von Dr Karl Alexander Leimbach. Fulda: Druck u. Comm.-Verlag der Fuldaer Actiendruckerei, 1894. Pp. 125.

This pamphlet is a dissertation on the Logic or rather the Methodology of Casuistry. Moral truth is attainable by reasoning, and is *immediately* discerned in a moral judgment, or *mediately* in the conclusion of a moral syllogism. Dr Leimbach indicates his position by a quotation from Bolgeni; morality has no secrets because the principles by which man may distinguish right from wrong in conduct can be discovered by anyone. The problem of the moralist is therefore to find a criterion of truth, or at least a guide to the probable where truth is unattainable. The tract consists of four parts. The first part treats of the idea of Certainty, Opinion, Doubt and Safety.

In the second part are examined various moral systems, or methods by which the path of truth and duty may be ascertained amidst the doubts and perplexities of human life.

The preference is finally given to the so-called Probabilism, or method of weighing evidence in doubtful cases, where demonstration is impracticable. Parts three and four are devoted to the historical justification of this method, and some rules are given for its application in special cases.

At page 42 is discussed the relation of freedom to law. Dr Leimbach accepts the dictum of Leo XIII., supported by Holy Writ and other authorities, viz. that liberty is anterior to law. Law is the rule and measure of *free* action. It is evident therefore that that which is bound and regulated must have existed before that which limits and regulates. In the mind of the Divine Creator freedom and law are united in a self-determining Act, and the human creature partakes of the Divine freedom in conforming to the Divine Will. Faith and reason are therefore respectively the compass and rudder of human conduct.

*Wesen und Entstehung des Gewissens; Eine Psychologie der Ethik.* Von Dr Theodor Elsenhans. Leipzig: Verlag von Wilhelm Engelmann, 1894. Pp. 334.

This work is divided into two parts, the first of which, to p. 161, is historical. The remainder of the book is devoted to a systematic analysis of the genesis and function of Conscience from the standpoint of Contemporary Psychology.

The historical retrospect embraces chiefly the post-Kantian writers. It is not of much interest.

The second part is also disappointing; the author had led us to expect an original exposition of the function and origin of the conscience as a psychological activity, but there is little in his dissertation that has not been culled from sufficiently well-known modern authors. Dr Elsenhans' treatment of the Intuitional School of Moralists seems very belated to English readers who are familiar with the writings of Butler, Price, Martineau and Sidgwick, and he has nothing to add to the *a priori* doctrines of Kant. On p. 298 the two chief factors of the development of conscience are stated to be (1) Social Life, (2) Intelligence. The relations of the sentient organism to its social environment, and the intellectual power of forming a rational estimate of these relations. The one is the material and the other the form of the moral faculty. Dr Elsenhans maintains that the activity of the moral agent must be determined by the social conditions to which he is subjected. This position he establishes by showing how the common conscience of communities develops through the successive stages of civilization, the hunting, nomadic, agricultural, etc.

*Die Gesetze und Elemente des wissenschaftlichen Denkens.* Von Dr G. Heymans, Professor der Philosophie an der Universität zu Groningen. Bd. II., *Theorie des naturwissenschaftlichen Denkens.* Leiden: S. C. Van Doesburgh; and Leipzig: Otto Harrassowitz, 1894. Pp. 273–478.

The first instalment of this work, which treated of the Method and Presuppositions of Formal Logic and Mathematics, was briefly noticed in *Mind*, O. S., Vol. 15, p. 580. In this second and final volume the author deals with the Logic of Natural Science in general, and also specially of Mechanics. Perhaps the most interesting feature of his work is the investigation of the nature of Causality as a logical principle. He takes up the position that the nature of Causation ought not to be determined merely by consideration of causes actually discovered, for none of these perfectly satisfy the demands of science. We should rather consider the ideal which scientific inquirers set before themselves, when they aim at ultimate and adequate causal explanations. In the discussion of mechanical principles, Dr Heymans gives a fresh and interesting analysis of the import of the conception of absolute motion, and of the mixed *a priori* and *a posteriori* character of the law of inertia. Critical notice of the work will follow.

*Schopenhauer. Ein Beitrag zur Psychologie der Metaphysik.* Von Rudolf Lehmann. Berlin: Weidmannsche Buchhandlung, 1894. Pp. 200.

This interesting and suggestive little volume contains four chapters—Personality and Philosophy, Romanticism and Rationalism, Monism and Ethics, the Method of Schopenhauer—preceded by a brief introduction, in

which the author confesses to the fascination exerted over him through many years by the philosophy of Schopenhauer, until the spell was broken through the claims of practical life (irreconcilable with a quietistic and anti-evolutionary system of belief), and a study of Kantian Criticism unrefracted by Schopenhauerian glasses. Then came a period of reaction, in which Herr Lehmann turned with aversion from Metaphysics in general and Schopenhauer in particular, devoting himself exclusively to psychological and historico-literary studies. In the course of the latter the old interest revived, but in a new form. In the writer's words "Schopenhauer now became to me a problem, a problem appertaining to Psychology and the History of Culture, which must be resolved with the aid of both these sciences."

According to the author the character of Schopenhauer was formed by the in-working of two dominating tendencies. The natural organic instincts were of almost demonic strength, but counterpoised by an equally commanding energy—an insatiable craving to construe the world rationally, to resolve the objects environing him into "the pure forms of abstraction and of logical relations" and to fashion a new world from these forms.

His life and his philosophy are the expression of these fundamental impulses:—no rest, no peace, save in the domain of pure thought, disinterested artistic activity and *will-less* contemplation.—Of those who are impelled to *think* the world, the author remarks, there are two kinds—the careful painstaking investigator, and the developer of an intuitively-apprehended first principle. To the latter class belonged Schopenhauer. As was natural, the artist got the better of the cautious inductive reasoner, and everything was sacrificed to the symmetry of his own construction.

Even so original and independent a genius as Schopenhauer could not escape the intellectual conditions of his age. He appeared at a time when two opposing forces were contending for empire,—on the one hand science, based on exact physical enquiry, and a *critical* philosophical method in harmony therewith; on the other, long-repressed feeling, which reasserted its rights in a manner that threatened to reinstate as the guide of life mediaeval ideals and mystical fancies. This twofold influence is betrayed in the title of Schopenhauer's great work—"Die Welt als Wille *und* Vorstellung." Under "Wille" is masked the spirit of Romanticism, under "Vorstellung" that of Rationalism or Enlightenment. In one half the work we see the influence of Kant's *Kritik*, in the other that of great mystics and ascetics, and materialistic occultism. And these counter-tendencies are never reconciled.

Perhaps the most interesting section is that entitled "Monism and Ethics." Neo-Spinozism, with its monistic, aesthetic, optimistic characters—the dominant intellectual note of the age of Goethe—is well described. Schopenhauer drew in the *monism* as his vital air, but despite his aesthetic bias declined the poetic optimism. The moralist got the better of the artist. Now as Herr Lehmann excellently remarks: "every moralising habit of thought tends naturally to Pessimism, because it never sees its demands satisfied in the actual world and life." There follows a brief but keen criticism of the Schopenhauerian doctrine of the will and pessimistic theory. One undeniable merit of Schopenhauer's is pointed out, that for the first time Asceticism is recognised as a problem of philosophy—only unfortunately inadequately resolved. Schopenhauer's understanding and misunderstanding of Kant are well shown. Now Schopenhauer, unlike his predecessor, holds that metaphysical knowledge *is* possible, only the knowledge which carries beyond the sphere of

possible experience is *empirical*. The world without must be interpreted by the world within; which comes to this, that the ultimate problems of Being are handed over to psychology: in short, Schopenhauer confounds psychological and metaphysical knowledge!

In fine, Psychology and Epistemology afford the material for his system. "The carrying over of their elements into the transcendent is that which one may call the philosophical method of Schopenhauer, the metaphysical hypostasis of the abstract concepts borrowed from those sciences its essential, nay sole, auxiliary,"—the bond of unity being emotional, an efflux from the personality of the constructive thinker.—An analysis of other metaphysical systems would reveal few further sources of error and contradiction. Hence an analysis of that of Schopenhauer may be regarded as a typical contribution to the psychology of Metaphysics.

*Lehrbuch der allgemeinen Psychologie.* Von Dr. J. Rehmke, Professor der Philosophie zu Greifswald. Hamburg und Leipzig: Leopold Voss, 1894. Pp. 579.

A very elaborate and also a very diffuse examination of the fundamental psychological principles. The author first treats of the nature of the mind and of its relation to the body and to the world of external objects; then of the constitution of a psychosis, or *Seelenaugenblick*, as he terms it; this is analysed into object-consciousness, state-consciousness (zuständliches Bewusstsein), and causal consciousness. Each of these then receives separate treatment. Emphasis is throughout laid on the necessary implication of a subject in all consciousness. Finally, the various phases of mental process are considered under the heads: Immediate Time-consciousness; Thinking; Memory; Remembrance; Mental Construction; Action; Personality. The book is somewhat difficult to read from the dryness and wordiness of the style; but it contains enough valuable matter to make it worthy of the attention of those who are specially interested in the questions with which it deals.

*Peregrinazioni Psicologiche.* Del Prof. Tito Vignoli. Milano: Ulrico Hoepli, 1895. Pp. 404.

A series of papers on topics of varying psychological interest, now collected for the first time but written between the years 1883—94, the majority for the *Rirista di Filosofia Scientifica* or for the R. Istituto Lombardo. Among the subjects treated are "The heredity of the moral dispositions" (argues a moral and mental, as a physical, continuity between man and the lower animals); "The psychical act of attention in the animal kingdom" power of introspection the distinguishing feature of man as compared with other animals); "Unconscious intervals in a coordinated series of psychical acts"; "A sexual psychology" (discusses mental and physical differences between men and women) etc., etc. The distinguishing feature of Prof. Vignoli's method is the frequent comparative use of the psychology of the lower animals.

---

Received also:—

J. Venn, *Symbolic Logic*, Second Edition, Revised and Rewritten, London, Macmillan and Co., 1894, pp. xxxviii., 540.

C. L. Morgan, *Psychology for Teachers*, London, Edward Arnold, 1894, pp. x., 246.

G. S. Fullerton, *The Philosophy of Spinoza*, New York, Henry Holt and Co., 1894, pp. 358.

J. W. Thomas, *Spiritual Law in the Natural World*, London, Longmans, Green and Co., 1894, pp. xv., 408.

J. H. Jackson, *The Factors of Insanities*, London, Danks and Son, 1894, pp. 25.

G. Hirth, *Les Localisations Cérébrales en Psychologie* (traduit de l'Allemand par Lucien Arréat), Paris, Félix Alcan, 1895, pp. viii., 133.

G. Beaulavon and D. Parodi, *Œuvres Choisies de Berkeley* (traduit de l'Anglais), I., Paris, Félix Alcan, 1895, pp. xxviii., 284.

A. Hamon, *Psychologie du Militaire Professionnel*, Paris, Bureaux de la Revue Socialiste, 1894, pp. 201.

B. Conta, *Théorie de l'Ondulation Universelle*, Paris, Félix Alcan, 1895, pp. xxii., 216.

D. Wetterhan, *Das Verhältnis der Philosophie zu der empirischen Wissenschaft von der Natur*, Leipzig, Wilhelm Engelmann, 1894, pp. viii., 110.

G. F. James, *Thomas Hill Green und der Utilitarismus*, Halle a. S., Max Niemeyer, 1894, pp. 37.

E. Martinak, *Die Logik John Locke's*, Halle a. S., Max Niemeyer, 1894, pp. 148.

E. Meyer, *Humes und Berkeleys Philosophie der Mathematik*, Halle a. S. Max Niemeyer, 1894, pp. 57.

J. Rehmke, *Unsere Gewissheit von der Aussenwelt*, Heilbronn, E. Salzer, 1894, pp. 48.

H. Romundt, *Ein Band der Geister*, Leipsic, C. G. Naumann, 1895, pp. 129.

C. M. Giessler, *Wegweiser zu einer Psychologie des Geruches*, Hamburg and Leipsic, Leopold Voss, 1894, pp. 77.

A. Comte, *Der Positivismus in seinem Wesen und seiner Bedeutung* (übersetzt von E. Roschlau), Leipsic, O. R. Reisland, 1894, pp. xii., 384.

A. P. Mauro, *Poesie Giovanili*, Catania, Reale Tipografia Pansini, 1894, pp. 14.

N. R. D'Alfonso, *Principii di Logica Reale*, Roma, G. B. Paravia, E. C., 1894, pp. 70.

# X.—PHILOSOPHICAL PERIODICALS.

In the International Journal of Ethics for October, **Professor Sidgwick** publishes an address on "Luxury"; of which the most important practical conclusion—that luxury is needed for artistic and æsthetic development—is rather affirmed than proved. **Mr F. H. Bradley**, writing on "The Limits of Individual and National self-sacrifice," presents combatively some deductions of a bellicose type from his principle that "the development of human nature" is the ultimate end of action; he has no doubt that "the meek will *not* inherit the earth." **Miss Gilliland** discourses on "Woman in the Community and in the Family"; she hopes, by reducing the number of a woman's child-bearing years, by persuading men to "take some part in the rearing and personal tending" of their children, and by introducing "cooperative dwellings," to enable a woman "to devote herself as a free human being" both "to the service of her family and to the service of humanity." **Mr Edward Montgomery** writes on "Ethics and Biology": his chief point is that Biology shows the "fundamental and essential activity of life" to lie in the "life of outside relations," as contrasted with the gratification of appetites which constitutes "entodermic life": and thus leads up to the ethical ideal. **Professor Ferri** writes on "National Character and Classicism in Italian Philosophy." **Miss E. E. C. Jones** gives a careful and well considered defence of "Rational Hedonism" against some recent assailants. There is an interesting discussion of "The Practical Value of Ethics" by **Mr J. S. Mackenzie.**

The Philosophical Review. Vol. III. No. 6. **J. G. Schurman.** 'The Consciousness of Moral Obligation.' [The sense of obligation is dependent upon an intellectual act, the recognition of rightness; but is itself an unique, unanalysable emotional experience, a simple feeling. It is in essence altogether subjective; a function of reason, which is the *differentia* of man from the animals. But it appears rarely, if ever, in this abstract form: it is objectively overlaid with piety, devotion, sympathy, propriety, prudence. Which is higher: the concrete, spontaneous, mixed, or the reflective, abstract, pure form? Probably the former, all things considered. Thus it would not be well to substitute secular for religious moral instruction in schools: that would mean that we tried to influence children by abstractions, like the categorical imperative (!). Recognising that the sense of obligation is thus elemental and subjective, and that it consists in free homage to a law or ideal of goodness, we can appreciate systems. The Intuitionalists or Transcendentalists are right in taking as the heart of the matter the sense of unconditional duty; wrong in regarding the statement of the fact as an explanation or vindication of it. The Empiricists are right in what they say of the emergence of the sense of obligation in consciousness: wrong in identifying the ante-

cedents, associates and reinforcements of the feeling with that itself. The Theologists make just the same mistake. But we may modify their view: our native sense of obligation being given as ultimate, we may conceive the moral ideal as the divinely intended goal and type of humanity,—the ground of obligation continuing subjective.] **S. W. Dyde.** 'Hegel's Conception of Freedom.' [Schwegler and von Hartmann criticise Hegel on the ground that his philosophical theory sacrifices the ethical freedom of the individual. But an analysis of the *Philosophy of Right* shows us that while Hegel makes short work of freedom in the sense given it by Hobbes and Rousseau he indefinitely deepens the idea of freedom by proving that man is not really free except as he identifies himself with the state as the revelation of the divine. The question of the critics must now be phrased: Does spirit or reason exhaust itself in the logical evolution of a rational constitution? The answer implies knowledge of Hegel's view of the evolution of spirit, in the Introduction to the *Philosophy of History*. That gained, we can raise again the original issue. If it is freedom not only to apprehend the reason in one's objective relations, but in conduct to identify oneself with this realised reason, then Hegel recognised, more, is the author of this concept of individual freedom. If freedom means possibility of the creation of a higher reason and of origination of a higher spirit, Hegel lends no countenance to the interpretation.—Reason of the return to Kant. Hegel and von Hartmann. Mr Bradley and sentience. Time and the Hegelian 'process' of the realisation of spirit.] **W. B. Elkin.** 'Relation of the Treatise of Human Nature (Book I.) to the Inquiry concerning Human Understanding.' [A careful, if somewhat colourless comparison: summary of a thesis for the philosophical doctorate. The standpoint of the two works is logically and practically the same. The Appendix of the *Treatise* influences the *Inquiry* but little. If read alone, the *Treatise* is sceptical, the *Inquiry* agnostic; but the whole Hume is sceptical.] **E. Adickes.** 'German Kantian Bibliography, X.' [Important essay on Fichte.—Bauerschubert, Bendavid, Feuerbach, Krug, Dolz, Erhard.] **J. H. Hyslop.** 'Discussion: the Ego, Causality and Freedom.' [Analysis of Neo-Libertarianism, in reply to Dewey: *Phil. Rev.* III. 3. Dewey reduces libertarianism to indifferentism, in order to repudiate the latter for determinism. But there are several forms of indifferentism, and different kinds of determinism.] Reviews of Books. Summaries of Articles. Notices of New Books. Notes. Index. Vol. III. No. 7. **J. Royce.** 'The external World and the Social Consciousness.' ["A general sketch," in Professor Royce's pleasant popular style, "of the psychological origin of our concept of the categories of what we are accustomed to call external reality." The social factor in our notion of the facts of the external world, and in the meaning we attach to externality; psychogenesis of this concept.] **J. Watson.** 'The Problem of Hegel.' [Criticism of D. J. Hill's *Genetic Philosophy*. Plea for the impartial consideration of Hegel as the mouthpiece of philosophy in the early part of the century; historical sketch of the literary development of the epoch. The advance of thought from Kant to Hegel: the latter stands to the former somewhat as Aristotle stood to Plato. Analysis of the first part of the Hegelian system, the Logic; relation to this of the *Philosophy of Nature* and the *Philosophy of Mind*.] **A. Seth.** 'Epistemology and Ontology.' [Reply to Ritchie's article on the "Relation of Metaphysics to Epistemology." Epistemology (1) investigates the ultimate nature of proof or evidence, and (2) analyses the conceptions which form the structure of knowledge. Ontology is a theory of the nature or mode of existence of that all-comprehensive Experience or Being which sustains and by completing

explains our fragmentary and contradictory experiences.] **E. Adickes.** 'German Kantian Bibliography, IX.' [Niemeyer, Pappenheimer, L. I. Snell, Tiedemann, Venturini, Ammon, Bauer.] Reviews of Books. Summaries of Articles. Notices of New Books.

BRAIN.—Part LXVIII. **H. J. Berkeley.** 'The Finer Anatomy of the Infundibular Region of the Cerebrum, including the Pituitary Gland.' **W. L. Andriezen.** 'On some of the Newer Aspects of the Pathology of Insanity.' **W. A. Turner and W. Bulloch.** 'Observations upon the Central Relations of the Vago-Glosso-Pharyngeal, Vago-Accessory and Hypoglossal Nerves, from the Study of a Case of Bulbar Paralysis.'

REVUE PHILOSOPHIQUE. Sept. 1894. **G. Mouret.** 'Le problème logique de l'infini. II. Valeur et Grandeur.' **Amelineau.** 'L'idée de l'âme dans l'ancienne Egypte. Sa genèse et son développement.' [Account of the gradual 'spiritualization' of the primitive notion of an attenuated but still material "double."] *Observations et documents.* 'De la durée du temps dans le rêve.—Analyses, etc.' October. **A. Binet et V. Henri.** 'De la suggestibilité naturelle chez les enfants.' [Account of experiments made with children of varying ages to ascertain the extent to which a simple suggestion may bias or overrule the judgment.] **H. Lachelier.** 'Théorie du jugement et du raisonnement déductif dans la "Logique" de Wundt.' [A simple résumé without critical comment.] **V. Egger.** 'Compréhension et contiguité.' [A further development of views expressed in the July and August Nos., 1893. There is no judgment of comprehension or of contiguity, as radically distinct from the judgment of extension or of resemblance. "The judgment, deriving from association by resemblance, remains, in ultimate analysis, confined to resemblance; and the relations of extension, being alone reducible to relations of resemblance, are also the only relations with which the judgment is directly concerned."] **Th. Ribot.** 'Recherches sur la mémoire affective.' [Under the head of "mémoire affective" M. Ribot treats of the recall to memory of tastes and smells, of organic sensations, of pleasures and pains, and of emotions and passions. Following the method now so much in vogue, of making a consensus of popular opinion by the dissemination of printed questions, he arrives at the conclusions;—(1) that there exists an 'affective' type of memory as clear and distinct as the visual, auditive, or motor type; (2) that besides a general affective type, there are partial types; and (3) that the (affective) reminiscence depends on the cerebral and internal conditions rather than on the actual original impression.—The fact that the recall of past events often reinduces an emotion identical with that which accompanied them, may perhaps be taken as less conclusive evidence than M. Ribot assumes it, since it may be argued that the reinduced emotions lack the marks proper to memory-images.] *Notes et discussions.* [M. Naville criticizes the distinction between psychological and physical laws drawn by M. Weber in the June number.] November. **Dugas.** 'La mémoire brute et la mémoire organisée.' [Discusses the relation and difference between the mechanical memory, the indiscriminate recall of past images so often conspicuously strong in idiots, and the memory proper to the thinker, when the recall is by way of intelligent connexion and selection.] **R. de la Grasserie.** 'De l'importance des langues sauvages au point de vue psychologique.' [Dwells on the psychological significance of those languages in which the parts of speech are still undistinguished, and meaning hangs on mere order of arrangement. Syncretism and subjectivity distinguishing features of primitive languages.] **G. Richard.** 'La discussion judiciaire et l'état de droit.—Revue Générale, etc.'

Revue de Métaphysique et de Morale.—Deuxième Année, No. 5. **G. Simmel.** 'Le Problème de la Sociologie.' [If Sociology is to be anything more than a mere method applied in other sciences, or merely a new term applied to the whole complex of mental sciences, we must find for it a definite and distinctive subject-matter. This subject-matter is, according to Simmel, the function of social combination, considered formally in abstraction from the special aims or interests of this or that society.] **É. Le Roy et G. Vincent.** 'Sur la Méthode Mathématique.' [There are two groups of mathematical sciences, (1) Theory of pure quantity, considered abstractly through reason alone, or Analysis, (2) Application of analytical forms to the rational representation of sensible quantities, or applied mathematics, comprehending Geometry, Mechanics and Analytic Physics. The method of analysis is the subject of the present article. The conclusions reached are: (1) The object of analysis is a pure abstraction, a form without any determinate material content. (2) An analytic truth is like a mould or empty form of which we demonstrate the necessity; to derive from it a proposition relative to the real world we have only to give it a filling in from the matter furnished by experience. (3) The human mind possesses only one primitive mathematical datum: the unit. On this datum it operates in various fashions. It thus creates the series of analytic concepts; and, by identification of these various modes of construction, the series of analytic truths.] **J. Weber.** 'Une Étude Réaliste de l'Acte et ses Conséquences Morales.' [Unpredictable spontaneity belongs to the essence of action as such. Writer follows the lines of Bergson; but he out-Herods Herod, and deduces very paradoxical consequences from the general doctrine.] Discussions &c. No. 6. **G. Remacle.** 'Du Rapport entre la Pensée et le Réel.' [Re-asserts, as against M. Fouillée's criticism, the position of the writer that knowledge, in the strict sense of the word, is confined to immediate momentary consciousness. All other so-called knowledge, including that of past states of our own consciousness, transforms its object in knowing it, and ought rather to be regarded as Art than as Science.] **G. Noël.** 'La Logique de Hegel: la Science de l'Essence' (Suite). [Treats of the categories of Essence and of the transition to the world of external phænomena.] **É. Le Roy et G. Vincent.** 'Sur la Méthode Mathématique' (Suite et fin). [Discusses the methods of Geometry, Mechanics and Physics, as applications of analytic formulæ.] Discussions. **G. Lechalas.** 'Note sur la nature du raisonnement mathématique.' [Criticises the article of M. Poincaré in No. 4 of this Review.] Notes Critiques &c.

Philosophische Studien. Bd. X. Heft 4. **W. Wundt.** 'Zur Beurtheilung der zusammengesetzten Reactionen. E. Kraepelin und J. Merkel. Beobachtungen bei zusammengesetzten Reactionen.' [Kuelpe, in his recently published *Grundriss der Psychologie*, subjected the methods and results of compound reaction-time experimentation to a severe criticism. Wundt here defends them. A point of especial interest is the question whether in choice-reactions there is given to introspection a special choosing process. Wundt, Kraepelin and Merkel answer in the affirmative: Kuelpe suggests a momentary lapse of memory as the explanation of the lengthened time. New experiments are promised. They will be interesting, since analysis of the simple reaction has now been carried so far that whatever comes out will have some claim to finality.] **J. Merkel.** 'Die Abhängigkeit zwischen Reiz und Empfindung' (concluded). [The relation between stimulus and estimation of sensation; lower deviations from Weber's law, etc. It is to be hoped that this long and valuable series of articles may be reprinted in book form, and their conclusions

definitely formulated in a summary. At present, unimportant and important are somewhat irritatingly intermixed.] **F. Kiesow.** 'Beiträge zur physiologischen Psychologie des Geschmackssinnes, II.' [Taste qualities: double sensations and associations: contrast—discovered, as against Oehrwall; salt contrasts with sweet, salt with acid, sweet with acid; there is no contrast of salt with bitter, sweet with bitter, and acid with bitter.] **J. Cohn.** 'Experimentelle Untersuchungen über die Gefühlsbetonung der Farben, Helligkeiten und ihrer Combinationen.' [The author finds that the more saturated colour is the more pleasing; and that yellow is the most generally unpleasant of a series of saturated colours. Neither result can claim universal validity. A combination of two colours is more pleasant, the farther removed the components are from one another. So with brightnesses, within the limits tested, 1 and 40. This is probably true in general. White is pleasanter than grey or black: the range of this judgment is doubtful. The law of brightness-combination holds if a colour and a brightness, or two colours are compared. The article contains good remarks on the affective judgment.] **A. Wenzel.** 'Beiträge zur Logik der Socialwirthschaftslehre, II.' [Social law.]

Vierteljahrsschrift für wissenschaftliche Philosophie.—XVIII. Jahrgang, Heft iv. **T. Achelis.** 'Zur buddhistischen Psychologie.' [An interesting comparison between Buddhist and certain phases of modern Psychology.] **R. Avenarius.** 'Bemerkungen zum Begriff des Gegenstandes der Psychologie.' (Zweiter Artikel.) [All objects of knowledge are *ipso facto* objects of psychological science, if and so far as they are considered in their logical dependence on the individual subject which is cognisant of them. The general position closely resembles that taken up by Dr Ward. Avenarius however diverges from Ward inasmuch as he regards the relation to the 'system C,' viz. to the brain process correlated with conscious process, as being for psychological purposes equivalent to, and capable of substitution for, the relation to a subject. Apart from this difference, the careful analysis of Avenarius constitutes a strong corroboration of Dr Ward's general definition of the scope of Psychology. He appears however to be unacquainted with Ward's work.] **A. Marty.** 'Ueber subjectlose Sätze und das Verhältniss der Grammatik zu Logik und Psychologie.' (Fünfter Artikel.) [(1) Criticises the views of Puls, Erdmann and Wundt, on the nature of impersonal propositions. Among other points, Marty contests Erdmann's position that a question is a judgment. Perhaps he is right as against the arguments of his opponent: but does not a question involve the Yes-No consciousness, inasmuch as it involves the suspension of the mind between Yes and No? (2) Criticises the views of Sigwart and Erdmann on the nature of existential propositions. The point debated is whether existence can properly be regarded as a predicate.] Anzeigen &c.

Philosophische Monatshefte.—Bd. XXX., Heft 7 and 8. **P. Natorp.** 'Ueber Socrates.' [Takes its point of departure in Karl Joël's book, *Der echte und der Xenophontische Sokrates*. Natorp would ascribe less weight to the authority of Aristotle, and more to that of Plato in the *Apology* and in the *Crito*, than Joël does. He regards it as possible to disengage in a large measure the Socratic element in Plato's teaching.] **K. Vorländer.** 'Ethischer Rigorismus und sittliche Schönheit, II.' [Ethical rigorism is justified as a necessity of ethical method. In nearly all the passages of Kant, where his ethical rigorism finds expression, this necessity of method is either explicitly indicated or implied. Schiller also has throughout accepted ethical rigorism in this methodological sense. What he has done is to supplement the ethical view by an æsthetic view which in no wise

contradicts it.] Among Recensionen there is a long notice of Volkelt's *Vorträge zur Einführung in die Philosophie der Gegenwart.* Bd. XXX., Heft 9 and 10. **O. Kleinenberg.** 'Das System der Künste.' [There are a dozen arts; six inductive, having their point of departure in concrete detail; and six deductive, having their point of departure in a universal plan or ideal. Painting is an inductive art, the drama a deductive one.] **W. Enoch.** 'Transcendentalpsychologie.' [Contains an appreciative account of a work by the Küstrin philosopher, Otto Schneider, entitled: *Transcendentalpsychologie, ein kritisch-philosophischer Entwurf.*] **K. Vorländer.** 'Ethischer Rigorismus und sittliche Schönheit, III.' [Schiller has worked out the relation between the æsthetic and moral view of Beauty on strictly Kantian lines.] Litteraturbericht &c.

Philosophisches Jahrbuch. Bd. VII. Heft 4. **Jos. Maassen.** 'Plato's notion of Deity' (continued). [Plato's God is an intelligent personal Being; acting according to eternal laws, founded upon His essence, and consequently not superior to Him. He is eternal; the world, which springs from Him, is not so: He is immutable, and change would be against His nature. The gods can have no human passions; painters and poets have given a false and misleading idea of Him. The Deity is eternally in a state of bliss; He comprises all things, is just, loves justice, hates what is wrong, punishes wickedness, cannot be pacified by gifts, and is supremely wise. Wisdom, the gift of God, is the highest virtue of all.] **Dr C. Gutberlet.** 'On the mensurability of psychical acts' (continued). [The article is a summary and an examination of the objections of (1) Elsas, (2) Ebbinghaus, and (3) Wahle. (1) *A.* "A psychical act cannot be measured, since one cannot be added to, or subtracted from, another; it is only figuratively that one is said to be greater or less."—But in Fechner's admeasurements it is only the greater or smaller intensity of the *object* (e.g. light felt) that is really measured; and this is no figure of speech. *B.* "We cannot admit it as proved that the magnitude of any sensation increases by the addition of its parts, nor that it is possible to find out the sum of the whole."—But, as, though we cannot add together different movements, we can measure the resulting velocity, so, while each element of the sensation may be different, we can measure the increase of intensity of the whole. (2) Ebbinghaus' objection fails, because his comparison between distances and sensations is not accurate. (3) "Sensations," says Wahle, "have no intensity, that is, no measurable intensity, since it would be necessary to apply in consciousness to one of them another which would be, say, half its intensity. And this is impossible."—But we can know that different lengths are exactly measurable, without applying a rule to them. A sound, a light, if doubled, may become as intense as another; so too we may think it as halved. One sensation certainly lasts twice, thrice, etc. as long as another; but to say exactly how much longer is hard.] **Prof. Tilm Pesch, S.J.** 'Dr Al. Schmid and the Theory of Cognition' (concluded). [The writer examines Dr Schmid's view of sensitive cognition; his affirmation that the external senses do not present us with noumenal but with phenomenal reality; his notion of general sense-presentations as contrasted with that of universal concepts; his attempt to bring Kant and Aristotle into agreement as to the existence of synthetical judgments *a priori;* his confusion between 'object' in the Kantian and in the Peripatetician sense; his historical review of the various theories of intellectual cognition; his opinion about the causality of the First Cause; and his doubts whether the reality of the external world, which he admits as possible, can be positively demonstrated to be true.] **Father C. Th. Isenkrahe.** 'Sense-

delusions and the Copernican theory.' [The article is partly an attack on F. Linsmeier, S.J. for going too far in the conclusions which he draws respecting this theory; they would go to destroy the value of the testimony of our senses, which he entirely gives up. His doctrine "that we ought to overlook it in face—not of an evident demonstration—but of a greater likelihood of the contrary to what it affirms," is denounced as unsafe. All so-called 'delusions of the senses' result from a false conclusion, rashly drawn from true premisses which the senses provide; either because we neglect to control one sense by another, or because we extend the conclusion farther than the domain of the senses. They, for instance, in the Copernican controversy, give us as a fact relative motion and immobility; where the absolute movement and immobility is, cannot be decided by their aid alone.]

Rivista Italiana di Filosofia. Sept.—Oct. **L. Ambrosi.** 'La classificazione dei sentimenti nella storia della filosofia.' [An historical survey of the various attempts at classifying feelings and emotions. These fall under one or other of the three broad classes, (1) attempts at classification preceding the proper discrimination between mere pleasure and pain and the emotions, passions, or desires deriving from it (Comprises Descartes, Spinoza and all classifications up to Kant. Bain also fails to observe the strict line of demarcation); (2) classifications of pleasures and pains by their accompanying phenomena (Kant, Hamilton, Mantegazza, Bouillier); (3) classifications of pleasures and pains independently of their objects (Dumont, Grote). The science of the future must follow on these latter lines, the great desideratum being a "general embryology" of pleasure and pain, showing the different modes of feeling corresponding to varying complexity of organisms.] **F. Ferri.** 'La scuola positiva di Diritto penale e *I nuovi orizzonti* di Enrico Ferri.—Bibliografia, etc.' Nov.—Dec. **G. Marchesini.** 'Saggio sul concetto monistico della continuità dinamica della psiche.' [Maintains the general dynamic continuity of consciousness as exhibited in the synthetic activity of attention, and discusses its manifestation in sensation, feeling and volition. Continuity directly proved by memory. This continuity is equivalent to unity; a unity not excluding, but underlying, the multiplicity of phenomena.] **F. Ferri.** 'La scuola positiva di Diritto penale e *I nuovi orizzonti* di Enrico Ferri.' **V. Di Giovanni.** 'Una lettura del Gioberti al Mamiani. Bibliografia etc.'

Vaprosi Philosophii i Psychologii (Philosophical and Psychological Problems[1]). *Fifth year, Fourth number*, pp. 372. **F. A. Zelenogorskii.** 'The Philosophy of Gregory Savvitch Skovorod.' [This concluding article reviews Skovorod's idea of practical philosophy at great length. Skovorod divides the sciences which properly deal with man into medicinal, jurisprudential, and theological; among the last, Ethics is the proper domain of the philosopher. It is the science of happiness, which consists, not in external things, but in peace of mind, joy of the heart, and strength of will, which is obtained by resignation to the will of God. Man should act conformably to nature, which is the mainspring of all things; for it awakens desire, which is the source of science and progress. Tendency, desire, satisfaction, nature and God,—all this means the same; and whatever act makes against the happiness of our nature is a foolish act. This doctrine may be called Pantheism; but it is a Pantheism which

[1] The organ of the Psychological Society of Moscow; edited by Professors Grote and Lopatyn; appears five times a year: January, March, May, September and November.

admits a personal God, and human free-will.] **W. A. Wagner.** 'On the Psychological nature of instinct, as shown by the recent data of experimental physiology' (concluded). [The writer describes many experiments made with beheaded insects, and comes to the conclusion that amongst the Invertebrata, instinct is more followed in working than the impressions of the senses, which are very imperfect. Flies, butterflies, caterpillars, bees, etc., not only live from five hours to six days without a head, but perform every movement as in their normal state, until their death, which results either from the wound received, or from the fact that they can no longer be fed.] **W. S. Solovieff.** 'First Data of Ethics.' [That which properly distinguishes man from the brute is the feelings of shame and conscience. These two feelings speak a different language, but what they say amounts to the same. It may be formulated in the following dictate: What is not right is forbidden.] **N. J. Grote.** 'Of Time' (continued). [It is as impossible to measure thought, ideation, and things intellectual in general, by the flight of time, as it is impossible to measure them in space. If we concentrate our thought on an external object, the time seems short; if upon internal phenomena, it appears long. The feelings out of which our imaginary representation of length of time is made up, are impressions of psychical effort, proceeding from successive central innervations.] **A. A. Tokarskii.** 'Cognition and Will.' [There are three particular cases (*momenti*) in which free-will may to a certain extent, appear. I. In *Attention*, the will is at times not free; but at others it is. II. In *Choice* between two objects, it is sometimes necessary that the will be exerted freely. III. In *Emotions*, the will, taken as a vital force, begins to show itself. The writer winds up by a sort of Platonic dialogue, in which he sums up by means of familiar examples, the teaching of the modern French school as concerns the will.] **A. A. Kozloff.** 'Gustavus Teichmüller.' [According to Teichmüller there are only four general directions of philosophy: Positivism, Idealism, Materialism, and Leibnitz's theory that the contradiction between mind and matter is a mere delusion, both mind and matter being united in one and the same being.] **W. A. Goltseff.** 'The psychology of the "Idées-forces."' [The writer examines the theory of Fouillée, and his endeavour to prove the psychological existence of the "idées-forces."]

# XI.—NOTES AND NEWS.

## "HYPOTHETICALS IN A CONTEXT."

THERE is an interesting contradiction, in result, between Mr Johnson's answer and mine (in the previous No. of *Mind*) to the main question raised by "Lewis Carroll." Perhaps it may be removed, or minimised, in the following manner.

My contention is, not that the sentence 'If $A$ is true, $B$ is not true' must on all occasions mean something more than 'the conjunction of $A$ with $B$ is false,' but that in the context in which it is here placed, it requires to be taken in a less negative sense than this,—at least in the absence of a special warning that its meaning is to be thus limited.

As the consequent of a hypothetical, it is expressly given as *possibly false*, whereas the other hypothetical (2) is given as *certainly true*. The effect of this context, it seems to me, is to oblige us to decide the question (whether these sentences have compatible meanings) as *adversely* as possible, not as favourably as possible, to the truth of the consequent 'If $A$, then not $B$.' We are challenged to find the most, not the least, that is involved in the given propositions (1) and (2), and therefore, I think, we are bound to take them as premisses of a syllogism in the *modus tollens*, since (apart from certain restrictions convenient for some of the purposes of Symbolic Logic) they naturally bear this interpretation.

I admit that the case would be otherwise if, instead of 'If $C$ is true, then if $A$ is true, $B$ is not true,' we were given '$A$, $B$, $C$, cannot be all true at once.' It is evident that Lewis Carroll has tacitly assumed, what Mr Johnson's treatment of hypotheticals assumes openly, that these propositions are equivalent. But this seems to involve the doctrine that a hypothetical can *never* be what Mr Johnson calls 'modal' (*Mind*, N. S. No. 1. p. 19). How then could it ever be used as major premiss, the essence of which use of a proposition is to assert the *inferribility* of the consequent from the antecedent?

ALFRED SIDGWICK.

Mr Alfred Sidgwick argues that, because a proposition occurring as clause in a hypothetical must be there regarded as possibly false and possibly true, it has in the hypothetical an import *different* from that of the same form of words affirmed or derived categorically. He also points out that in the *modus ponens* or the *modus tollens* the *same* proposition is affirmed or denied categorically, which in the hypothetical premiss is regarded as possibly false and possibly true. Hence, *if Mr Sidgwick's general contention is sound*, a form of words occurring as clause in a hypothetical has a *different*—and at the same time *not* a different—import from that of the same form of words occurring in a categorical. I infer from this that *Mr Sidgwick's general contention is* not *sound.*

When Mr Sidgwick states that the two premisses (i.) 'If $A$ then $B$' and (ii.) "From the truth of $C$ would follow 'If $A$ then not $B$'" constitute together a *modus tollens*, he is simply begging the question at issue. Whether or not they constitute a *modus tollens* is to be decided by the answer to the question whether or not 'If $A$ then $B$' and 'If $A$ then not $B$' are contradictories. And this question is wholly independent of the fact that the latter occurs as a consequent clause in a hypothetical and therefore is given as possibly false, while the former is given as unconditionally true. For the *import* or *force* of a given form of words is altogether unaffected by its possible falsity. I certainly claim to interpret the given propositions and clauses by reference to their *context*. In short, taking Mr Lewis Carroll's ingenious problem as a whole, it is obvious that my solution is the only solution in accordance with the common-sense view of the matter.

W. E. Johnson.

---

## NEWS.

We have received the following notice :—

MM. Beaunis et Binet, directeur et directeur-adjoint du Laboratoire de Psychologie de Paris (Sorbonne), feront paraître en 1895 une *Année psychologique*, contenant les travaux du laboratoire et le résumé des recherches expérimentales de psychologie parues en 1894 dans les pays étrangers. Les psychologues sont priés de leur envoyer des tirages à part de leurs travaux, pour que l'analyse puisse en être faite dans *l'Année*.

*Cambridge: Printed at the University Press.*

New Series. No. 14.] [April, 1895.

# MIND

## A QUARTERLY REVIEW

OF

## PSYCHOLOGY AND PHILOSOPHY.

### I.—THE PHILOSOPHY OF COMMON SENSE[1].

By Professor Sidgwick.

When I received, some months ago, the invitation to address your society, my mind was carried irresistibly back to a period in the last century, in which, through my study of three eminent teachers whose works have had a permanent influence on my thought, I seem to feel more at home in the intellectual life of your famous University than in that even of my own. It is a period of about 50 years; beginning in 1730, when Francis Hutcheson was summoned from Dublin to fill in Glasgow the chair now worthily occupied by my friend Professor Jones; and ending in 1781, when Thomas Reid retired from the same chair to put into final literary form the teaching that he had given here for 17 years. Between the two, as the immediate predecessor of Reid, though not the immediate successor of Hutcheson, stands the greater name of Adam Smith. I felt "in private duty bound" to select the work of one of the three as the theme of my address: the difficulty was to choose. I should have much liked to try to explain the attraction which the refinement, balance and comprehensiveness of Hutcheson's ethical views have always had for me; but on such an occasion it seemed prudent to defer to the sometimes capricious judgment of history: and in face of that judgment, I felt diffident of my power of persuading you to regard Hutcheson's system with more than antiquarian interest. With Adam Smith, as

[1] An address delivered to the Glasgow Philosophical Society on Jan. 10, 1895.

I need hardly say, the case was altogether different. His doctrine has gone out into all lands, and his words unto the ends of the world: and hardly a year passes without some attempt being made somewhere to extract fresh instruction from his epoch-making work, or to throw fresh light on its method or its relations. But for this very reason I doubted whether I should not seem superfluous in adding my pebble to the imposing cairn of literary products that has thus been raised to his memory. The intermediate position of Reid, unquestionably a more important leader of thought than Hutcheson, unquestionably less familiar to current thought than Adam Smith, seemed on the whole to fit the opportunity best: I propose therefore this evening to present to you—not with the fulness and exactness of a critical historian but in the lighter and more selective style allowed to an occasional utterance—such features of Reid's philosophical work as appear to me of most enduring interest.

I will begin by endeavouring to remove a prejudice, which perhaps my very title may have produced.

"The Philosophy of Common Sense," you may say, "is not this after all an intellectual monstrosity? Philosophy is a good thing, and Common Sense in its place is a good thing too: but they are both better kept apart. If we mix them, shall we not find ourselves cutting blocks with a scalpel, and using a garden-knife for the finer processes of scientific dissection?"

And I am the more afraid of this prejudgment, because in the only passage of Kant's works in which he speaks of Reid's philosophical labours, it is this antithesis that he applies in condemnation of them: and, speaking as I do in a University where the leading expositor of Kant, to Englishmen as well as Scotsmen of our age, has taught for so many years, I cannot but feel this condemnation a formidable obstacle to my efforts to claim your sympathy for Reid.

The passage I refer to is that in Kant's *Prolegomena to any future Metaphysic* (1783) in which he "considers with a sense of pain" how completely Hume's opponents "Reid, Oswald, Beattie, and even Priestley" missed the point of Hume's problem. Instead of answering Hume's sceptical reasoning by "probing more deeply into the nature of reason," as Kant believed himself to have done, "they discovered a more convenient means of putting on a bold face without any proper insight into the question, by appealing to the common sense of mankind...a subtle discovery for enabling the most vapid babbler" without a "particle of insight" to hold his own against the most penetrating thinker.

The censure you see is strong: but is it thoroughly intelli-

gent? Reid, says the critic, has not caught Hume's point. Has Kant caught Reid's? I venture to doubt whether he ever gave himself a chance of catching it.

This for two reasons. First, look at the names he puts together, "Reid, Oswald, Beattie;"—the first a thinker of indubitable originality; the third a man of real, but chiefly literary, ability, a poet by choice and a philosopher from a sense of duty; the second a theological pamphleteer. Is it likely that Kant would have thus bracketed the three, if he had really read them? How came he then to put them on a par? That is easily explained. He had doubtless read Priestley's examination which treats the three together, and which, written as it was primarily from a theological point of view, gives even a larger space to Oswald. This explains Kant's odd conjunction of names, "Reid, Oswald, Beattie and even Priestley,"—even, that is, their critic Priestley. I imagine Kant was on general grounds more likely to be attracted by Priestley's book than by Reid's, since he had a keen interest in the progress of contemporary physical science, and Priestley had here a well-deserved reputation: and certainly the Reid who appears in Priestley's pages, misquoted, misrepresented and misunderstood, was likely enough to be regarded as another Oswald.

My second reason is that if Kant had ever studied Reid's *Inquiry into the Human Mind* he could hardly have failed to extend his studies to the Hume to whom Reid was replying. This may startle you. "What," you may say, "Kant not read Hume: why any shilling handbook of the history of philosophy will tell you that Hume's scepticism woke up Kant from his dogmatic slumbers." Certainly, but it was not the same scepticism as that which woke up Reid to construct the Philosophy of Common Sense: it was the veiled, limited and guarded scepticism of the *Inquiry into the Human Understanding*, not the frank, comprehensive and uncompromising scepticism of the *Treatise on Human Nature*. Kant's Hume is a sceptic who ventures modestly to point out the absence of a rational ground for his expectation that the future will resemble the past, while in the same breath hastening to assure the reader that his expectation remains unshaken by his arguments. Reid's Hume is a sceptic who boldly denies the infinite divisibility of space, who professes to have in his intellectual laboratory a solvent powerful enough to destroy the force of the most cogent demonstration, and who ventures to tell his fellow-men plainly that they are each and all "nothing but bundles of different perceptions, succeeding each other with inconceivable rapidity." I think that if Kant had even looked into Reid's

*Inquiry*, the difference between the earlier and the later Hume must have struck him, and he must have been led on to read the *Treatise on Human Nature*; whereas it is evident and admitted that he never did read it.

Do you still want proof that Kant did not catch Reid's point?. I have a witness to bring forward whom Kant himself would have allowed to be a good witness,—Mr David Hume: who was persuaded by a common friend to peruse parts of Reid's work before it appeared, and to write his view of them to the author. Hume did not much like the task in prospect: "I wish," he grumbles to the common friend, "that the parsons would confine themselves to their old occupation of worrying one another, and leave philosophers to argue with moderation, temper and good manners." In fact, he expects another Warburton: but when he has read the MS. his tone changes. "It is certainly very rare," he writes to Reid, "that a piece so deeply philosophical is wrote with so much spirit, and affords so much entertainment to the reader.... There are some objections," he goes on, "that I would propose, but I will forbear till the whole can be before me. I will only say that if you have been able to clear up these abstruse and important topics, instead of being mortified, I shall be so vain as to pretend to a share of the praise: and shall think that my errors, by having at least some coherence, had led you to make a strict review of my principles, which were the common ones, and to perceive their futility."

Well, I think you will agree with me that this is a charmingly urbane letter, from a free-thinker of established literary reputation to a parson turned professor, as yet hardly known in the world of letters, who had hit him some smart blows and ventured to laugh at him a little as well as argue with him. But Hume recognises that the parson unexpectedly writes like a philosopher: and Hume, as we saw, has a high ideal of the manner in which philosophers should conduct their debates; and it is a pleasure to find him acting up to his ideal, a pleasure all the greater from the rarity with which it is afforded to the student of philosophical controversy.

But it was not on Hume's urbanity that I wished now to dwell: I wished to point out that it never occurs to Hume that Reid has appealed from the expert to the vulgar, and endeavoured to avoid his conclusions without answering his arguments. What rather strikes Hume is the philosophic depth that his antagonist has shown in attacking his fundamental assumptions;—which were, as he says, the common ones, and which Reid accordingly had traced back through Berkeley and Locke to the start of modern philosophy in Descartes. It is

difficult, I think, for us to appreciate equally the penetration shown in this historical *aperçu*, because the connexion of ideas that Reid makes apparent now seems to us so obvious and patent. But this is the case with many important steps in the development of philosophical thought: when once the step has been taken, it appears so simple and inevitable that we can hardly feel that it required intellectual force and originality to take it. You remember, perhaps, the depreciatory remark made on Christopher Columbus by a schoolboy who "didn't see why so much fuss should be made about his discovery of America, since, if he went that way at all, he could not well miss it." Similarly it now seems to us that if Reid "went that way at all" he could not fail to find the source of the Idealism of Berkeley and the pulverizing scepticism of Hume in Locke's assumption that the immediate object of the mind in external perception is its own ideas: and that finding this view equally in Malebranche, he could not fail to trace it to Descartes. His merit lay in the independence of thought required to free himself from this assumption, question it and hunt it home: and this merit Hume evidently recognised.

And now, perhaps, I may have persuaded some of my hearers that Kant entirely failed to see what Reid and his followers were driving at. But if so, I have gone too far, and persuaded them of more than I intended. The appeal to vulgar common sense *has* an important place in Reid's doctrine: he does rely on it: nor can I defend him from the charge that he relies on it too much. He does hold that the mere ridiculousness of Hume's conclusions is a good reason for disbelieving them: and even in his later and maturer treatise he speaks of the sense of the ridiculous as a guide to philosophic truth, in language that lacks his usual circumspection. For our sense of the ridiculous is manifestly stirred by the mere incongruity of an opinion with our intellectual habits: a strange truth is no less apt to excite it than a strange error. When the Copernican theory was slowly winning its way to acceptance, even the grave Milton allowed himself a jest on "the new carmen who drive the earth about": and I can remember how, when the Darwinian theory was new, persons of the highest culture cracked their jokes on the zoologist's supposed private reasons for the absurd conclusion that his ancestor was a monkey. And this is doubtless all for the best: laughter is a natural and valuable relief in many perplexities and disturbances of life, and I do not see why it should not relieve the disturbance caused by the collision of new opinions with old: only let us remember that it is evidence of nothing except the mere fact of collision. But, though Reid does rely

more than he ought on the *argumentum ad risum*, he is not so stupid as to think that a volume is required to exhibit this argument. He does say to the plain man, "If philosophy befools her votaries, and leads them into these quagmires of absurdity, beware of her as an *ignis fatuus*": but he immediately adds, "Is it, however, certain that this fair lady is of the party? Is it not possible that she may have been misrepresented?" and that she has been misrepresented is the thesis which he aims at proving.

In the course of the proof, no doubt, he leads us again to Common Sense, as the source and warrant of certain primary data of knowledge at once unreasonal and indubitable: but the Common Sense to which we are thus led is not that of the vulgar as contrasted with the philosopher: Reid's point is that the philosopher inevitably shares it with the vulgar. Whether a philosopher has been developed out of a monkey may possibly be still an open question; but there can be no doubt that he is developed out of a man; and, if we consider his intellectual life as a whole, we may surmise that the larger part of it is occupied with the beliefs that he still shares with the unphilosophical majority of his contemporaries. It is on this fact that Reid's appeal to him is based. He refers to Hume's account of the manner in which, after solitary reflection has environed him with the clouds and darkness of doubt, the genial influence of "dinner, backgammon and social talk" dispels these doubts and restores his belief in the world without and the self within: and Reid takes his stand with those who are "so weak as to imagine that they ought to have the same belief in solitude and in company." His *essential* demand, therefore, on the philosopher, is not primarily that he should make his beliefs consistent with those of the vulgar, but that he should make them consistent with his own; and the legitimacy of the demand becomes, I think, more apparent, when we regard it as made in the name of Philosophy rather than in the name of Common Sense. For when we reflect on plain Common Sense,—on the body of unreasoned principles of judgment which we and other men are in the habit of applying in ordinary thought and discourse,—we find it certainly to some extent confused and inconsistent: but it is not clear that it is the business of Common Sense to get rid of these confusions and inconsistencies, so long as they do not give trouble in the ordinary conduct of life: at any rate it is not its most pressing business, since system-making is not its affair. But system-making is preeminently the affair of Philosophy, and it cannot willingly tolerate inconsistencies: at least if it has to tolerate them, as I sadly fear that it has, it can only tolerate

them as a physician tolerates a chronic imperfection of health, which he can only hope to mitigate and not completely to cure.

Accordingly, in Reid's view it is the duty of a philosopher—his duty *as* a philosopher—to aim steadily and persistently at bringing the common human element of his intellectual life into clear consistency with the special philosophic element. And Reid is on the whole perfectly aware,—though his language occasionally ignores it,—that for every part of this task the special training and intellectual habits of the philosopher are required. For the fundamental beliefs which the philosopher shared with the plain man can only be defined with clearness and precision by one who has reflected systematically, as an ordinary man does not reflect, on the operations of his own mind; even the elementary distinction between sensation and perception is, Reid admits, only apprehended by the plain man in a confused form. To bring the distinction into clear consciousness, to attend to "sensation and perception each by itself, and to attribute nothing to one which belongs to the other," requires, he tells us, "a degree of attention to what passes in our own minds, and a talent for distinguishing things that differ, which is not to be expected in the vulgar." The philosopher alone can do it: but in order to do it, he must partially divest himself of his philosophic peculiarities. That is, he must temporarily put out of his mind the conclusions of any system he may have learnt or adopted, and merely bring his trained faculty of reflective attention to the observation and analysis of the common human element of his thought.

But if it be admitted that the philosopher alone is capable of the steady and clear attention required to ascertain the fundamental beliefs of Common Sense, what valid evidence is there of the general assent to these beliefs on which Reid lays stress, and which, indeed, the term implies? He seems to be in a dilemma; either the many must be held capable of reflective analysis, or the decision on questions of fundamental belief must after all be limited to the expert few. The difficulty is partly met by pointing out that the philosophical faculty required to distinguish and state such beliefs with precision much exceeds that required to judge of such a statement when made; just as few of us could have found out the axioms required in the study of geometry, but we could easily see the truth of Euclid's at a very early age. Still, granting this, I think that Reid presses too far the competence of plain man even to *judge* of philosophical first principles. It is true, as he urges, that this judgment requires no more than a "sound mind free from prejudice and a distinct conception of the questions": but it does not follow, as Reid seems to think,

that "every man is a competent judge, the learned and unlearned, the philosopher and day-labourer alike:" because a good deal of the painful process we call "learning" is normally needed to realise these apparently simple requirements, freedom from prejudice and distinctness of conception. I will not affirm that no day-labourer could attain a distinct conception of the positions that Reid is defending against Berkeley and Hume: but I venture to think that a day-labourer who could convince us that he had attained it would be at once recognised as a born philosopher, incontrovertibly qualified by native genius for membership of the society that I have the honour to address.

At the same time I cannot think Reid wrong in holding that the propositions he is most concerned to maintain as first principles are implicitly assented to by men in general. That for ordinary men sense-perception involves a belief in the existence of a thing perceived, independent of the perception: that similarly consciousness involves a belief in the existence of a permanent identical subject of changing conscious states: that ordinary moral judgment involves the belief in a real right and wrong in human action, capable of being known by a moral agent and distinct in idea from what conduces to his interest: that in ordinary thought about experience we find implicit the unreasoned assumption that every change must have a cause, and a cause adequate to the effect, all this I think will hardly be denied by any one who approaches the question with a fair mind. He may of course still regard it as unphilosophical to rest the validity of these beliefs on the fact of their general acceptance. But here again it must be said that Reid's own deference to general assent is of a strictly limited and subordinate kind. He is far from wishing truth to be determined by votes: he only urges that "authority, though tyrannical as a mistress, is useful as a handmaid to private judgment." He points out that even in the exactest sciences authority actually has this place: even a mathematician who has demonstrated a novel conclusion is strengthened in his belief in it by the assent of other mathematical experts who have examined his demonstration, and is "reduced to a kind of suspense" by their dissent.

This is, I think, undeniable: and perhaps we may separate Reid's just and moderate statement of the claims of Authority from his exaggerated view of the competence of untrained intellects to deal with philosophical first principles; and simply take it as a cardinal point in the philosophy of Common Sense that a difference in judgment from another whom he has no reason to regard as less competent to judge them himself,

naturally and properly reduces a thinker to a "kind of suspense." When the conflict relates to a demonstrated conclusion, it leads him to search for a flaw in the opponent's demonstration; but when it relates to a first principle, primary datum, or fundamental assumption, this resource appears to be excluded: and then, perhaps, when he has done all that he can to remove any misunderstanding of the question at issue, the Common Sense philosopher may be allowed to derive some support from the thought that his own conviction is shared by the great majority of those whose judgments have built up and continually sustain the living fabric of our common thought and knowledge. And this, I think, is all that Reid really means to claim.

I have now, I hope, succeeded in making clear the general relation which Reid's epistemology bears to his psychology. I have not used these modern terms, because Reid himself blends the two subjects under the single notion of "Philosophy of the Human Mind": but it is necessary, in any careful estimate of his work, to distinguish the process of psychological distinction and analysis through which the fundamental beliefs of Common Sense are ascertained, from the arguments by which their validity is justified. I do not propose to enter into the details of Reid's psychological view, which has largely become antiquated through the progress of mental science. But if Locke is the first founder of the distinctively British study, Empirical Psychology, of which the primary method is introspective observation and analysis, I think Reid has a fair claim to be regarded as a second founder: and even now his psychological work may be studied with interest, from the patient fidelity of his self-observation, the acumen of his reflective analysis, and, especially, his entire freedom from the vague materialism that, in spite of Descartes, still hung about the current philosophical conception of Mind and its operations. It is, indeed, in the task of exposing the unwarrantable assumptions generated by this vague materialism that the force and penetration of Reid's intellect is most conspicuously shown.

Let me briefly note this in the case of the beliefs involved in ordinary sense-perception, since this problem occupies a leading place in his discussion. Not, I ought to say, that he is specially interested in this problem on its own account: he makes it quite clear that it is on far greater issues that his thought is really set. God, Freedom, Duty, the spirituality of human nature,—these are, for Reid as for Kant, the grave matters really at stake in the epistemological controversy. But these greater matters, for the very reason of their supreme

importance, are apt to stir our deepest emotions so strongly as to render difficult the passionless precision of analysis and reasoning which Reid rightly held to be needful for the attainment of philosophical truth: while at the same time it is clear to him that all the questions hang together, and that the decision of one in the sense that he claims will carry with it the similar determination of the rest.

Accepting this view then, and remembering that in a trivial case we are trying no trivial issue, let us examine his treatment of the cognition by Mind of particular material things. Here Reid's task, as he ultimately saw, was merely carrying further the work of Descartes. By clearly distinguishing the motions of material particles antecedent to perception from perception itself as a psychical fact, Descartes had got rid of the old psychophysical muddle, by which forms or semblances of things perceived by the senses were supposed somehow to get into the brain through the "animal spirits" and so into the mind. But he had not equally got rid of the view that perception was the getting of an idea in the mind, from which the existence of a thing outside the mind *like* the idea had to be somehow inferred. This view is definitely held, not only by his disciple Malebranche but by his independent successor Locke. They do not see what Reid came to see, that the normal perception of an external object presents itself to introspection as an immediate cognition: that is, as a cognition which has no psychical mediation, no inference in it. What prevented them and others from seeing this was, mainly, a naïve assumption that the mind can only know immediately what is "present" to it, and that things outside the body cannot be thus present; as the mind cannot go out to them and they cannot get into the mind, only the ideas of them can get in. It was reserved to Reid to point out the illegitimacy of this assumption, and to derive it from a confused half unconscious transfer to Mind and its function of cognition, of the conditions under which body acts on body in ordinary physical experience. When the assumption is made explicit and traced to its source, it loses, I think, all appearance of validity.

It is to be observed, that in affirming external perception to be an immediate cognition, Reid does not of course mean that it is physically uncaused. He only means that the perceiving mind has not a double object, its own percept and a non-mental thing like its percept: and accordingly that our normal conviction of the present existence of the non-mental thing perceived is not a judgment attained by reasoning, but a primary datum of knowledge. He recognizes like his predecessors that it has

physical antecedents, movements of material particles both without and within the organism. And he recognizes, more distinctly than his predecessors, that it has psychical antecedents and concomitants, *i.e.* sensations which he carefully distinguishes from the perception that they suggest and accompany. A consideration of these antecedents may possibly affect our reflective confidence in the cognition that follows them,—that question I will deal with presently,—but at any rate it cannot properly modify our view of the content of this cognition as ascertained by introspective observation. This, I think, remains true after duly taking account of the valuable work that has been done since Reid's time, in ascertaining more accurately the antecedents and concomitants of our common perceptions of extended matter. Whatever view we may take on the interesting but still disputed questions as to the precise manner in which visual, tactual, and muscular feelings have historically been combined in the genesis of our particular perceptions and general notions of matter and space,—there can still be no doubt of the fundamental difference in our present consciousness between these perceptions or notions and any combinations of muscular, tactual, and visual feelings.

It has indeed been held, by an influential school of British psychologists, that this manifest difference is merely apparent and illusory: it has been held that by a process of "mental chemistry" sensations and images of sensation have been "compounded" into what we now distinguish as perceptions and conceptions of matter in space, and that the latter really consist of sensations and images of sensation, just as water really consists of oxygen and hydrogen. But this view involves a second illegitimate transfer of physical conditions to psychical facts; and Reid would certainly have rejected "mental chemistry" in this application as unhesitatingly as he does reject it when applied to support the conclusion that a "cluster of the ideas of sense, properly combined may make up the idea of a mind." He would have rejected it for the simple reason that we have no ground for holding any fact of consciousness to be other than careful introspection declares it to be. In the case of material chemistry, the inference that a compound consists of certain elements depends on experimental proof that we can not only make the compound out of the elements, but can also make the elements again out of the compound. But even if we grant that our cognitions of Matter and Space, of Self and Duty, are derived from more elementary feelings, it is certain that no psychical experiment will enable us to turn them into such feelings again: the later

phenomena, if products, are biological not chemical products, resulting from evolution, not from mere composition.

Still, it may be said, granting the existence of cognitions and beliefs that cannot now be resolved into more elementary feelings, and that present themselves in ordinary thought with the character of unreasoned certitude, systematic reflection on these beliefs and their antecedents must render it impossible to accept them as trustworthy premises for philosophical reasoning. It is a commonplace that the senses deceive, and the more we learn of the psychophysical process of sense-perception, the more clear it becomes why and how they must deceive. Even apart from cases of admitted illusion, philosophical reflection on normal perception continually shows us, as Hume urges, a manifest difference between the actual percept and what we commonly regard as the real thing perceived. Thus, Hume says, "the table which we see seems to diminish as we remove farther from it: but the real table which exists independent of us suffers no alteration. It was, therefore, nothing but its image which was present to the mind. These are the obvious dictates of reason." In answering this line of objection Reid partly relies on a weak distinction between original and acquired perception, which the progress of science has rendered clearly untenable and irrelevant. Apart from this his really effective reply is twofold. First he points out that the very evidence relied upon to show the unreality of sense-percepts really affords striking testimony to the general validity of the belief in an independent reality known through sense-perception. It is by trusting, not by distrusting, this fundamental belief that Common Sense organised into Science continually at once corrects and confirms crude Common Sense. Take Hume's case of the table. If nothing but images were present to the mind, how could we ever know that there exists a real table which does not alter while the visible magnitude changes with its distance from us? The plain man knows this through an acquired perception, by which he habitually judges of real magnitude from visible appearances: but science carries the knowledge further, enabling us to predict exactly what appearance a given portion of extended matter will exhibit at any given distance from the spectators. Now all this coherent, precise and unerring prediction rests upon innumerable sense-perceptions; and the scientific processes which have made it possible have been carried on throughout on the basis of the vulgar belief in the independent existence of the matter perceived. "Is it not absurd," Reid asks, "to suppose that a false supposition of the rude vulgar has been so lucky in solving an infinite number of phenomena of nature?"

Suppose, however, that the opponent resists this argument: suppose he maintains that, though physical science may find the independent existence of matter a convenient fiction,—as mathematicians find it convenient to feign that they can extract the square root of negative quantities,—still in truth Mind can only know mental facts—feelings and thoughts. Suppose he further urges that the common belief in the independent existence of the object of perception is found on reflection to have no claim to philosophic acceptance, because while admittedly unreasoned it cannot be said to be strictly intuitive:—granted that I may directly perceive the table before me, I cannot directly perceive that it exists independently of my perception. To this line of argument Reid has another line of reply. He points out to the Idealist that he does not escape from this kind of unreasoned belief by refusing to recognise a reality beyond consciousness. He has still to rely on data of knowledge which are open to the same objections as the belief in the independent existence of matter. For instance, he has to rely on memory. If sense-perception is fallible, memory is surely more fallible; if we do not know intuitively and cannot prove that what we perceive really exists independently of our perception, still less can we either know intuitively or prove that what we recollect really happened: if on reflection we find it difficult to conceive how the Non-ego can be known by the Ego, there is surely an equal difficulty in understanding how the Present Ego can know the Past. And yet once cease to rely on memory, and intellectual life becomes impossible: even in reasoning beyond the very simplest we have to rely on our recollection of previous steps of reasoning. A pure system of truths reasoned throughout from rational intuitions may be the philosophic ideal: but it is as true of the intellectual as of the physical life that living somehow is prior to living ideally well: and if we are to live at all, we must accept some beliefs that cannot claim Reason for their source. Is it not then, Reid urges, arbitrary and unphilosophical to acquiesce tranquilly in some of these beliefs of Common Sense, and yet obstinately to fight against others that have an equal warrant of spontaneous certitude? May we not rather say that it is the duty of a philosopher to give impartially a provisional acceptance to all such beliefs, and then set himself to clarify them by reflection, remove inadvertencies, confusions and contradictions, and as far as possible build together the purged results into an ordered and harmonious system of thought?

If, finally, the opposing philosopher answers that he cannot be satisfied by any system that is not perfectly transparent

to reason, Reid does not altogether refuse him his sympathy, though he cannot encourage him to hope. "I confess," he says, "after all that the evidence of reasoning, and of necessary and self-evident truths, seems to be the least mysterious and the most perfectly comprehended...the light of truth so fills my mind in these cases that I can neither conceive nor desire anything more satisfying. On the other hand, when I remember distinctly a past event, or see an object before my eyes," though "this commands my belief no less than an axiom...I seem to want that evidence which I can best comprehend and which gives perfect satisfaction to an inquisitive mind." And "to a philosopher who has been accustomed to think that the treasure of his knowledge is the acquisition of his reason, it is no doubt humiliating to find" that "his knowledge of what really exists or did exist comes by another channel" and that "he is led to it" as it were "in the dark." "It is no wonder" then "that some philosophers should invent vain theories to account for this knowledge:" while others "spurn at a knowledge they cannot account for and vainly attempt to throw it off." But all such "attempts" he holds, are as impracticable as "an attempt to fly."

The passage from which I have quoted was published in 1785, when Reid was 75 years of age. Even before it was published, attempts at aerial navigation had suddenly come to seem less chimerical in the physical world; and, before the end of the century, in the world of thought, attempts to transcend and rationally account for the beliefs of Common Sense —more remarkable than any dreamt of by Reid—had begun to excite some interest even in our insular mind. The nineteenth century is now drawing to its close; and these attempts to fly are still going on, both in the physical and in the intellectual world; but in neither region, according to my information, have they yet attained a triumphant success. At the same time our age, which has seen so many things achieved that were once thought impossible, may without presumption contemplate such attempts in a somewhat more hopeful spirit than was possible to Reid: and I should be sorry to say anything here to damp the noble ardour or to depress the high aspirations that ought to animate a society like yours. But if there should be any one among you who, desirous to philosophize and yet fearing the fate of Icarus, may prefer to walk in the dimness and twilight of the lower region in which my discourse has moved,—then I venture to think that he may even now find profit in communing with the earnest, patient, lucid and discerning intellect of the thinker, who, in the history of modern speculation, has connected the name of Scotland with the Philosophy of Common Sense.

## II.—NATURE OF INFERENCE IN HINDU LOGIC.

By S. N. Gupta.

*Aim and scope of Hindu Logic.* The word "Nyáya" is often mistaken as equivalent to Logic. But in reality the word "Nyáya" may be roughly taken as equivalent to an "argument." The word however now stands for a system of Indian Philosophy. One of the six systems of Hindu Philosophy is called "Nyáya," because it treats of arguments more thoroughly than any other. Nyáya then is not synonymous with Logic.

According to British logicians generally, Logic is the doctrine of Inference, and the end of Logic is the attainment of truth by thought, *i.e.* by the comparison of one thing with another. Intuitive or immediate knowledge is according to them beyond the province of Logic, which is concerned only with inferential or mediate knowledge. In this sense Logic is equivalent to *Anumánbád* or the doctrine of Anumán, which means knowledge of one thing through another. But in European Philosophy Logic is also taken in a far wider sense, in which *all* truth, *i.e.* all knowledge intuitive and inferential, immediate and mediate, is the end of Logic. Ueberweg the great German logician is one of those who adopt this wider view of Logic. In this sense Logic is equivalent to the Indian *Pramánabád* or the doctrine of Proof or means of valid knowledge. Proof or Pramána is the means of arriving at Pramá or knowledge of things as they are, whether that knowledge be inferential or immediate. Pramánabád deals with the whole subject of knowledge and lays down the conditions of valid knowledge. Proof accordingly includes Intuition, in what I am inclined to call Hindu Logic, taking the word Logic in the same sense in which Ueberweg uses it. British Logic or the doctrine of Inference is thus only a part of Ueberweg's or Hindu Logic.

Hindu Logic is essentially material or objective, for the result of Proof is Pramá, which is thus defined by Bisvanáth,

a commentator on Gotama: "Pramá is the knowledge of things as they are;" and truth which is the object of Hindu Logic means not merely formal but material truth.

*Parts of Hindu Logic.* Hindu Logic is divided into as many parts as there are kinds of Proof. Even an ordinary student of British Logic knows how much difference of opinion there is on logical subjects. Hindu Logic too is not less a field of contention. There are different opinions on every subject, and, as in British Logic, here too a student has the liberty of forming his own opinions and criticising others.

Gotama, the founder of the Nyáya system, notices the difference of opinion as to the varieties of Proof in the second section of the second chapter of his *Nyáya Aphorisms.* Eight is the largest number of varieties of Proof maintained in Indian Logic. They are (1) *Pratyaksham,* (2) *Anumánam,* (3) *Upamánam,* (4) *Sabdas,* (5) *Aitihyam,* (6) *Arthápattis,* (7) *Sambhabas,* and (8) *Abhábas.* I shall briefly explain these in their order.

(1) *Pratyaksham* is defined as follows in the Bhásya, the oldest commentary on Gotama's *Aphorisms.* "*Pratyaksham* is knowledge gained through the direct relationship of the sense and the object." The senses include the five external senses and what is called in Nyáya Philosophy the *manas.* This word *mana* is mistranslated by the English "mind." *Mana* has no equivalent in the English language; but in respect of its function it may be translated by the "Internal Sense." By the Internal Sense, according to some British writers, the Ego can know itself and its own states or phenomena. With them it means the power of "Introspection," which is called the Internal Sense only metaphorically; for there is no Material Sense for that purpose. But according to some of our philosophers there is a Material Sense called *mana* specially fitted for the purpose, which can therefore be really called a *Sense,* exactly as the eye or the ear is called a sense. It is now easy to translate the word Pratyaksham, for it is the same as *Intuition,* which includes Internal and External Perception, *i.e.* Perception of the external objects as well as of the Ego and its phenomena.

(2) *Anumánam,* as we have seen, is knowledge of one thing through another, which latter serves as the *Lingam* or sign or "mark." It may be taken as equivalent to Mediate Inference. It excludes Immediate Inference.

(3) *Upamánam,* according to the Bhásya, is such "knowledge of similarity as 'as is the cow so is the Gabaya'." I know that *Gabaya* is the name of an animal *like* the cow; the animal however has never been seen by me. I now see an animal like cow. Hence I know that this is the animal whose name is Gabaya. Thus Upamánam is the process of discovering

for one's self the connection between a thing and its name, when the description of the thing is previously known. The Bhasya holds "the object of Upamánam is the meaning of a name. First it is known that Gabaya is like a cow. An animal like cow is perceived by the senses; hence it is known that this animal's name is Gabaya." Similarly "having heard that *mudgaparni* is like *mudga* and *mashparni* is like *mash*, an individual recognises these objects by Upamánam and then gathers these herbs for medicinal purposes." The Britti, a later commentary on Gotama's *Aphorisms*, adds "Dissimilarity or distinction also enables us to discover the meanings of names. *E.g.* we learn that this animal is called camel, because it possesses the distinction of a very large neck, *i.e.* in this it is dissimilar to other beasts." We thus see that Upamánam is the application of names to things, through their similarity or dissimilarity to other things. It is difficult to find a word in English Logic that will correspond to Upamánam. It is often carelessly translated by Similarity, or Comparison, and sometimes, ridiculously enough, even by Analogy. I do not think it fair to translate it by any English word.

(4) *Sabdas* literally means "word" and is translated by "Authority." It is thus defined by Gotama: "Word is the teaching of the reliable." This definition is explained in the following lines of the Bhyasya:—"Word (or word considered as proof) is the word of the veracious, *i.e.* those who have actually observed the things of which they are speaking, and who are at the same time impelled by the desire of relating things and events exactly as they saw; be they Rishis, Áryas, or Mlechchhas."

(5) According to the Britti, "*Aitihya* includes all those sayings which begin with 'It is said,' and of which the first speaker is unknown, and which have been handed down from generation to generation." It may be translated by "Tradition."

(6) According to the Bhásya, *Arthápattis* is the inference of a meaning which is implied in the direct meaning of a sentence or proposition. As, for instance, when it is said "If there is no cloud, there is no rain," it may be inferred that "when there is rain, there is cloud." All such inference in which we make explicit the implicit meaning of a proposition is called Arthápattis. It may therefore be translated by "Immediate Inference."

The above definition seems to identify Immediate Inference with Arthápattis. In reality, however, Hindu Logic does not recognise Immediate Inference as proof. The only kind of Immediate Inference here spoken of, which some of the schools of Hindu Logicians recognise, is the so-called Hypothetical-

Categorical Syllogism, which is in reality no proof at all but a form of Immediate Inference. J. S. Mill justly observes that in immediate inference "there is not really any inference; there is in the conclusion no new truth, nothing but what was already asserted in the premisses, and obvious to whoever apprehends them." The so-called Hypothetical-Categorical Syllogism is an inference of this kind.

(7) According to the Britti, *Sambhava* is knowledge derived from the knowledge of (mere) coexistence. It is the same as Probability. *E.g.* a Bráhman is probably learned; a hundred is probable in a thousand.

(8) The Britti says "Abhaba is the inference of the presence of a thing from the absence of what is contradictory in nature to it; as the inference of the existence of snake from the absence of Nakul" (a species of weasel).

The above eight are varieties of proof. What conditions each of them must satisfy in order that each kind of Proof may be valid is an altogether different question and cannot be dealt with here. As has been said above, all these are not admitted to be independent proofs by all the different schools of Indian Philosophy. The following is a summary of the difference of opinion on this subject.

(1) The Chárbákas hold that there is no proof other than Perception. (2) The Vaisesikas hold that Perception and Inference are the only Proofs. They do not reject the others as proofs, but maintain that the others are reducible to inference, are only different applications of inference. This remark is also applicable, *mutatis mutandis*, to the following opinions. (3) In the seventh aphorism of the Samádhipáda of Pátaugala Philosophy it is held that Perception, Inference, and Authority are the only proofs. (4) Gotama admits the first four, Perception, Inference, Authority, and Upamán, as proofs. The following opinions are gathered from Pandit Jayanáráyan's Commentary on the fifth Aphorism of the second section of the ninth chapter of Vaisesika Darsana. (5) The Mimánsakas add Immediate Inference or Arthápatti to the four of the Naiyáyikas, and thus maintain that there are five proofs. (6) The Pauránikas add Tradition and Probability to the five of the Mimánsakas and hold the seven as proofs. (7) According to the Bhattas and the Vedantikas, Abhába or inference through absence is also a proof.

Of all the various kinds of Proof, Perception is the most certain. The Bhásya says "Perception is the most certain knowledge. When we have a desire of knowing a thing, if we receive instruction about it from some authority, there is yet a desire to know it by Inference. Even when we infer the object,

there is still a desire to perceive it. But as soon as we perceive the thing the desire is for ever quenched." We do not want to know a thing more certainly when we perceive it.

*Nature of Inference.* I shall now try to give a rough idea, as best I can in a foreign tongue, of the nature of Inference (the subject matter of British Logic) as conceived in the most advanced school of Hindu Logic. It should be borne in mind that we cannot expect to find in Hindu Logic of Inference parts exactly corresponding to the several parts of British Logic. The process of Inference is called Anumán, and the product is called *Anumiti*. It is generally identified by English writers with Deduction. But as will appear hereafter this identification can be only a very rough one. In fact like J. S. Mill's "True type" of reasoning it includes both Induction and Deduction.

We have seen above that Anumán is the knowledge of one thing through another. In every inference three things are necessary, viz. (1) the *Paksha* or that about which something is inferred, (2) the *Sádhya* or that which is inferred about the Paksha, and (3) the *Hetu*, reason, or Linga, lit. "mark" (the same word as used by Mill), by means of which the Sádhya is inferred in the Paksha. But it is evident that anything is not inferred of anything. Every Anumiti or inference must satisfy the two following psychological conditions:—we must be sure (1) that the relation between the Hetu and the Sádhya is such that we are warranted to infer the latter through the former; (2) that the Hetu or mark is in the Paksha. In other words, the Hetu or Linga must be Vyáptibisishta, *i.e.* have Vyápti, the Inference-Relation, and have Pakshadharmatá, *i.e.* existence in the Paksha. Anumiti is defined by Ganges Upádhyáya, the founder of the modern system of Nyáya, as "Knowledge derived from the knowledge of the Hetu having Vyápti and being in the Paksha." Vyápti means such a relation between the Hetu and the Sádhya as warrants us to infer the latter from the former, to regard the former as the unmistakeable sign or "mark" of the latter. Dr Roer truly remarks "It is difficult to find an adequate word for this term in English." I therefore translate it by "Inference-Relation."

It is exceedingly interesting to observe that this type of reasoning exactly corresponds with J. S. Mill's "True type" of reasoning. Mill was justly dissatisfied with what he called the "popular" division of reasoning into Induction and Deduction, and to him belongs the merit of discovering, in the European world, the "True type" of reasoning, "which falls under neither of these descriptions, and which, nevertheless, is not only valid, but is the foundation of both the others." His description of this type of reasoning exactly corresponds to

what I have given above as the definition of Anumiti. Having discovered "the universal type of the reasoning process," he divides the operation of reasoning into two steps answering to what Upádhyáya lays down as the two conditions of Inference and by which he defines Reasoning. Mill's two steps, stated in a general form, are:—"first, that of ascertaining what attributes are marks" of what others; "and, secondly, whether any given individuals possess those marks." He identifies the first with Induction and the second with Deduction. In Hindu Logic Reasoning is not divided into two steps, but in every reasoning that which is used as the Hetu or mark (1) must have a definite specific relation with what is inferred of any individual or individuals; and (2) it must be in the Paksha or the individual or individuals of which something is inferred.

I shall try to illustrate the nature of Anumiti by an example. Suppose that I see "smoke" issuing out of a "mountain." From that I conclude that the mountain has "fire." The conclusion is stated in Sanskrit as Parbato bahnimán, "the mountain with-fire." Thus the conclusion has only two parts "mountain" and "with-fire." The former is a noun and the latter is a predicative adjective. In the opinion of English logicians in general this cannot be the form of the conclusion, which, inasmuch as it is a judgment, must always be stated in the form of a proposition consisting of the Subject, the Predicate, and the Copula expressing the relation between the Subject and the Predicate. In a Sanskrit logical proposition we have no copula at all. At first in the sight of a European reader this may seem to be a grave defect; but it is not so. The introduction of the copula into the logical analysis of a proposition is merely an accident of the language. The copula is not an essential part in the analysis of knowledge or of a judgment. In Hindu Logic all knowledge and therefore all inference can have this simple form:—this substance with this attribute. The copula depends upon the spirit of a language, and as far as I can see if the logic of a language can and does dispense with the copula so much the better. As W. E. Johnson truly observes in *Mind* N.S. No. 1 (p. 23), "The usual logical analysis of the predicative-term into *copula* and *predicate-term* is not fundamental and is in some respects particularly misleading. This analysis is generally, in fact, a merely *verbal* device, having no logical significance." He would have a proposition analysed into two parts, the "subject-term" and the "predicative-term," exactly as we have got in our Sanskrit Logic. In the above example of Inference

"Mountain" is the Paksha, and
"Fire" is the Sádhya.

The Sádhya, "fire," is inferred of the Paksha, "mountain." The Hetu or mark of the Sádhya is always stated by a single word, the name of the thing which serves as the mark, with a certain inflection. The Hetu in the above instance is given as

*Dhumát*, because of "smoke."

In English Logic the Hetu or reason of inference should be stated in the form of the proposition "the mountain has smoke."

Now let us ask a student of British Logic the following question:—"Given 'this mountain has fire' as conclusion, and 'this mountain has smoke' as premiss; what is the suppressed constituent of the inference?" He will readily answer that it is "All that has smoke has fire." This universal proposition is taken as the ground of inference. If you ask the same question of a student of Hindu Logic he will say that the ground of inference is the relation Vyápti of "smoke" with "fire." It is this difference between the European and the Hindu Systems of Logic that I mean to emphasize. The peculiarity of Inference in Hindu Logic consists in the *Vyápti*. The word does not seem to be as old as Hindu Logic itself. Gotama the founder of the Nyáya System, and his earliest commentator Pakshila Svamin, also called Vátsáyana, the author of the Bhásya, do not use the word Vyápti in their definitions of Anumiti. Nor does it occur in the definition given by Kanáda, the founder of the Vaisesika system. The Bhásya very concisely yet clearly explains the process of inference as follows:—"Inference must always be preceded by Perception, *viz.* perception of the sign and the significate as related. We first perceive the related two; and afterwards by either perceiving or remembering the sign in a particular thing we infer the significate which we do not perceive." What is here called by the simple and general name of "relation" is afterwards changed by later logicians for the specific Inference-Relation or Vyápti. Knowledge of Vyápti is now regarded as an essential and indispensable condition of inference. Vyápti is itself a relative term, implying two correlatives. The Sádhya is called the Vyápaka and the Hetu is called the Vyápya; and the relation between them, without the knowledge (valid or invalid) of which inference never takes place, is called Vyápti. Vyápti-báda or the theory of Vyápti comprises a discussion of two very important questions:—(1) *Ká Vyáptis, i.e.* what is the nature of this Inference-Relation? and (2) *Katham Vyápti-graha, i.e.* how is this Relation known?

An ordinary student of British Logic may be inclined to ask, "Why this elaborate attempt to define Vyápti? The Indian philosophers, like the European logicians, ought to have

taken the universal proposition as the ground of inference." To this the British logicians themselves, like J. S. Mill, have given an unanswerable reply. If the universal proposition be taken as the ground of inferring a particular included in it, reasoning must always move in a *Chakraka* (lit. a circle). Besides, the Indian logician asks, "What is the psychological necessity of inferring the particular when the universal is already in the mind? Thus the supposition, that the universal proposition is taken as the ground of inferring a particular included under it, involves a psychological fiction and a logical chakraka (circle). How do you know the universal "all Hetu is Sádhya"? Such a knowledge is impossible. "All *H* is *S*" ordinarily means a collocation of all such instances as "this *H* is *S*," "that *H* is *S*" &c. &c. But it is impossible that all *H* should form the object of one piece of knowledge. There must always be many *H*'s which will be absent from your mind both in time and in place. How can these form the object of your knowledge? It must be maintained therefore that all *H* is present in your thought only through its connotation. Thus instead of taking *H* and *S* in their denotation, you are compelled to take them in their connotation. Connotation is unitary, and therefore the connotation of all *H* can form the object of a single piece of knowledge. Now, the knowledge of the connotation of *H* (Hetu), and the knowledge of the connotation of *S* (Sádhya), so long as they remain two disconnected pieces of knowledge, or even one knowledge, if possible, of two distinct disconnected connotations, cannot be the ground of inference. To produce inference the two connotations must be known *related* as Vyápya and Vyápaka. To know them thus related is to know their relation *Vyápti*. Viewing the question through the light of European Logic we may say that Vyápti is that relation between *H* and *S*, on the knowledge of which we can assert the universal proposition "All *H* is *S*." Vyápti itself is the *relation* which forms the ground of the universal affirmation. We thus see that Hindu Logic lays special stress upon the knowledge of a *relation* as the indispensable psychological source of inference. Mill resolves "the universal type of the reasoning process...into the following elements: certain individuals have a given attribute; an individual or individuals resemble the former in certain other attributes; therefore they resemble them also in the given attribute." If from this analysis we try to find the nature of Vyápti or the relation between the "other" attribute (the Hetu) and the "given" attribute (the Sádhya), it seems to be mere coexistence. From the knowledge of the mere coexistence of two attributes we infer the one from the other. British logicians have made

no attempt to define this relation. It is because Hindu Logic makes the knowledge of this relation an indispensable condition of inference, that the discussion about the nature of Vyápti has formed an important chapter of Hindu Logic. British Logic has nothing corresponding to it. We thus see the importance of the question asked by Ganges Upádhyáya immediately after the definition of inference, *viz.* "What is Vyápti the knowledge of which is a condition of inference?"

The term Vyápti is surely older than Ganges Upádhyáya, the founder of modern Nyáya, who is supposed to have lived in the latter end of the 14th century. He criticises the definition of Vyápti as given by an ancient author. Philosophical authors in Sanskrit do not as a rule give the names of those whose opinions they notice or criticise. Their annotators generally supply the names of those authors or schools. The origin of the old definition that Ganges criticises at the beginning was evidently unknown to his commentators, for they do not supply it. The definition is *Avyabhicharitatvam Vyápti.* Ganges first gives five possible meanings to this definition, probably those in which it was actually taken by the ancient school, and then rejects them all by a single objection. This part of the text with the annotations on it is called the Vyápti-panchaka, the Five Vyáptis. I shall not give the five meanings, but only two of them which are considered important. The two meanings are *Sádhyábhábabadabrittitvam* and *Sádhyabadanyábrittitvam*; first, "that the Hetu does not exist in that which has the absence of the Sádhya," and secondly, "that the Hetu does not exist in what is other than that which has the Sádhya." These two meanings are embodied in "No *H* is not-*S*," or "No not-*S* is *H*," which is called in English Logic the obverse and the contrapositive respectively of "All *H* is *S*." In English Logic it is thus assumed that "No *H* is not-*S*" is equivalent to "All *H* is *S*." In ordinary text-books of Deductive Logic these are given as equivalents without any qualifying observation. No doubt whatever is entertained about their equivalence. It is however a relief to find that Dr P. K. Ráy in the fifth edition of his *Text-book of Deductive Logic* (Macmillan and Co. 1891) states in Appendix G that this equivalence is not always true. There is a class of cases in which this is not true, *viz.* those in which there is no contradictory of *S*, in which not-*S* does not exist. He says "If the term *B* in the proposition "all *A* is *B*" has no contradictory, *i.e.* if it covers the whole sphere of thought and existence, then the proposition can be neither obverted nor contraposed." You will seek in vain for such a qualifying remark in ordinary text-books of English Logic. But what does not strike even the authors of text-books of British

Logic is, strange to say, the very first thing that every student of Hindu Logic has to learn. The very first thing he has got to learn when he is said to begin the study of inference is that "all *H* is *S*" is not always equivalent to "No *H* is not-*S*." The latter proposition is an absurdity when *S* is *Kebalánvayi, i.e.* covers the whole sphere of thought and existence. The two-fold definition of Vyápti given above is thus too narrow, because it is inapplicable where the Sádhya is found in every object of thought and existence. There not-*S* is an absurdity and inconceivability. "Knowable" and "Nameable" are among the examples of *Kebalánvayi* terms. If you say there is a thing not-knowable, how do you know it? If you say there is a thing not-nameable, you must point that out, *i.e.* somehow name it. Thus you contradict yourself. "This thing is knowable because nameable." This inference is valid because whatever is nameable is knowable, and *vice versa.* Each of the two terms covers the whole sphere of thought and existence. Not-*S*, *i.e.* not-knowable, is an absurdity and has therefore to be rejected out of account by Indian Logic.

Ganges Upádhyáya himself gives four alternative definitions of Vyápti, one of which as improved and altered by his commentators is now accepted as the *Sidhántalakshana, i.e.* final definition. I shall first briefly explain the technical terms used in the definition, and then give the definition itself, without entering into the discussions contained in the celebrated treatise, by Yagadisha, called the *Sidhántalakshana.*

(1) In English Logic propositions are divided according to their quantity, and by the position of a term in a logically stated proposition we can at once tell whether it is distributed or not. The distribution of a term means that the whole of its denotation has been taken into consideration, *i.e.* every individual possessing the connotation of the term has been taken into consideration. In Sanskrit Logic the same idea is expressed in a different manner. The abstract noun from Sádhya is *Sádhyatá.* Now, there cannot be such a thing as pure indeterminate Sádhyatá. It must be *avachchhinna, i.e.* determined by something; and the attribute or attributes connotated by the term used as Sádhya is said to be the determinant of the Sádhyatá. Thus in the example "this mountain has fire, because of smoke," "fire" is the Sádhya and "fireness" is the determinant of the Sádhyatá; and "things denoted by the term used as Sádhya" is expressed by the phrase "individuals possessing the attribute which is the determinant of Sádhyatá."

(2) Similarly "smokeness" is the determinant of Hetutá, which is the abstract noun from Hetu; and "things denoted

by the term used as the Hetu" is expressed by the phrase "individuals possessing the attribute which is the determinant of Hetutá."

(3) Again, there cannot be such a thing as pure absolute negation. Negation is always correlated to a position or affirmation. The negative must always have a positive or affirmative correlated to it. The positive in relation to its negative is called the Pratiyogi. Thus in the phrase *Patábháva, i.e.* "negation of cloth," Pata or cloth is the Pratiyogi. The abstract noun from Pratiyogi is Pratiyogitá. Pratiyogitá cannot be pure undetermined. The attribute determining Pratiyogitá is called its determinant. In the instance given above Petatva or "cloth-ness" is the determinant of Pratiyogitá.

Now, Vyápti as most briefly expressed implies that the determinant of Sádhyatá is the non-determinant of the Pratiyogitá of every negation that exists in the object where the Hetu is; that the connotation of the term used as Sádhya is the non-determinant of every position correlated to the negation in that which has the Hetu. For the sake of shortness, instead of using the clumsy phrase "non-determinant of the Pratiyogitá or position correlated to the negation," I shall use "non-determinant of the negation," taking the two to mean the same thing for our present purpose.

Take the old example again, "This mountain has fire, because of smoke." Here smoke is the Hetu; and the culinary hearth, *e.g.* is a thing which has the Hetu, smoke. From the culinary hearth many things are absent; *e.g.* cloth is not in the culinary hearth. Therefore cloth-ness, the attribute connoted by cloth, is a determinant of a negation in culinary hearth. Cloth is negated in (or denied of) culinary hearth; therefore cloth-ness can be said to determine the negation in culinary hearth. But "fire-ness" which is the determinant of the Sádhyatá is a non-determinant of the negation in culinary hearth, for it cannot be said that fire is not in the culinary hearth while smoke is there. The principal part of Ganges' definition as modified by Raghunáth Siromani may not now be unintelligible. As, however, a literal translation will still be wholly unintelligible to those who have not studied the subject in the original, I shall try to give only a very rough idea, which is the utmost that I can do, the subject being extremely abstruse and the language a foreign one. The main part of the definition runs thus:

The coexistence in anything of the Hetu and that which has for its connotation an attribute which is non-determinant of the negations in that thing, is the Vyápti of things having

the connotation of the Hetu with things having that non-determinant attribute for their connotation.

The merit of the above definition consists in this, that Vyápti is conceived to be a relation between two connotations. Thus Vyápti between two connotations is the coexistence of two things having the two connotations respectively, in one (or more than one) thing, under the condition that the connotation of the Sádyha is non-determinant of the negations in that thing (or things). The objection to the ancient definitions is thus avoided because Ganges' definition does not make use of the "negation of Sádhya," or "things other than those having the Sádhya." From the knowledge of *mere* coexistence of two things in one or more things we do not infer the existence of the one from the existence of the other, unless we have the knowledge that the former does not and cannot exist without the latter, that the connotation of the former is the non-determinant of the negations in things having the latter. When it seems to us that a man draws an inference from mere coexistence he really bases the inference on mistaken Vyápti. When from the existence of *A*, we infer the existence of *B*, it is not from the knowledge that "all *A* is *B*," but from the knowledge that *A* cannot exist without *B*. This the Hindu logician does not express by saying "No not-*B* is *A*," or "No *A* is not-*B*," for there are cases in which not-*B* is an absurdity; but by saying that the attribute connoted by *B* is non-determinant of the negations in that which has the connotation of *A* for its connotation. Thus the emphasis is everywhere laid on the attributes and connotations.

There was still a class of cases which presented a further difficulty to the Hindu logicians, *viz.* those cases in which *A* coexists with, as well as without *B*, when *B* and not-*B* exist in the same thing in different parts. *E.g.* the tree contains monkey (on its branches), and the want or absence of monkey (on its trunk). To include these cases within the definition, "negation" in the above definition is qualified by the phrase "not coexisting with its correlated position." The connotation of the Sádhya must be the non-determinant of such a negation as does not coexist with its correlative position; otherwise in such cases although the Sádhya coexists with the Hetu, its connotation becomes the determinant of the negation, for the Sádhya is also absent there.

*Improvement of the definition by Siromani.* There were many definitions of Vyápti accepted by the various logical sects of India, before and during the time of Ganges Upádhyáya. He was a native of Mithila (north-east Behár). He founded the modern school of Nyáya. His great work, the *Tattvachintámani*,

of which the subject is Proof, is the text which has always been regarded as the great authority on Proof, and on which it was the great ambition of later logicians to write commentaries. And gradually the study of Logic came to mean the study of a few selected portions of Ganges' work with commentaries on them, till at last the study of Logic has been confined to that portion of Ganges' work which treats of Inference. *Didhiti*, the commentary on Ganges' Inference, which is most universally read, is by *Raghunáth Siromani*. There are two important elucidations of this commentary, one by Yagodish Tarkálankár, and the other by Gadádhar Bhattácháryya. Different portions of these are read in connection with the *Didhiti* of Raghunáth. The celebrated work *Didhiti*, though calling itself a commentary on the portion on Inference in Ganges' *Tattvachintámani*, is in many respects an original work. The author, Raghhunáth Siromani, is supposed to have lived at a time which seemed particularly favourable to the growth of learning and independence of thought in Bengal, especially in Nuddea; for, according to tradition, he was a contemporary of Chaitanya, the great religious reformer of modern India. In fact, he was such a powerful thinker in an age of scholastic infertility that he distinctly declared that he cared not if his conclusions and theories were contradictory to the six systems of philosophy prevalent in India, provided they were in accordance with reason. This was not an insignificant thing in a writer of that period. His life, too, would be a very interesting and instructive study, if the materials for a biography could be at all procurable in India. He was not satisfied with Ganges' definition of Vyápti, and even after giving it the most favourable interpretation (which I have given above) could not help substituting a better one. His claim to original thinking however is not based mainly on his treatment of Vyápti.

He pointed out that in all inferences at least three relations are involved; *e.g.* in the inference "this mountain has fire, because of smoke," (1) we know that the Hetu, smoke, is in the mountain, *i.e.* has a certain relation with the mountain, *viz. contact*. This relation between the Paksha and the Hetu may not be the same in all instances. The relation which the Hetu is conceived to have with the Paksha is called "the relation which determines the Hetutá." (2) The relation between the Hetu and the Sádhya is, as we have seen, the Vyápti. (3) By reason of the Vyápti, the Sádhya is inferred in the Paksha, *i.e.* we infer that a certain relation exists between the Sádhya and the Paksha. The relation in which the Sádhya is

conceived to be in the Paksha is called "the relation which determines the Sádhyatá."

Similarly Pratiyogitá (*i.e.* position or affirmation correlated to a negation) is also determined by a relation. In other words, in every affirmation or negation we have in view a certain relation. For instance, when we say that the cloth is absent from the hearth, we mean that it is absent there in the relation of contact. One thing may be absent from one place in one relation, and present in that place in another relation. *E.g.* fire is present in this mountain in the relation of contact, *i.e.* fire is in contact with this mountain; but fire is absent from this mountain in the relation of inherence (the relation in which an attribute, *e.g.* exists in a substance, or the whole exists in its parts), *i.e.* fire is neither an attribute nor an integral part of this mountain. When therefore one thing is denied of another thing a certain relation is had in view.

The following definition should therefore be substituted for the definition given by Ganges:

The simultaneous existence, in one and the same thing, of the Hetu, in a definite relation; and of a thing having a certain attribute for its connotation, in a definite relation, which latter (attribute and relation) are joint non-determinants of negations which have the Hetu;—such simultaneous existence is Vyápti of things having the connotation of Hetu for their connotation, with things having that non-determinant attribute for their connotation, under those definite relations.

An example or two will make the definition clear. "This mountain has fire, because of smoke." Now, culinary hearth is that which has the Hetu, smoke, in the definite relation of contact. The relation in which fire exists there is contact. Positions correlated to negations in culinary hearth cannot be determined by fire-ness *plus* contact; *i.e.* contact of fire cannot be wanting in culinary hearth when there is smoke; therefore fire-ness and contact are the joint non-determinants of negations in culinary hearth. Fire may be absent from it in any other relation, or something else may be absent from it in the relation of contact; fire-ness in the relation of contact is non-determinant of negations in the culinary hearth. Hence smoke has Vyápti with fire, *i.e.* fire exists in the relation of contact in that in which smoke exists in the relation of contact.

The two relations in this example happen to be the same, but there are instances in which they are different; *e.g.* in the inference, "Chaitra has happiness, because of wealth or money," the Sádhya happiness exists in the individual Chaitra in the relation of inherence, *i.e.* the state or property of happiness

inheres in Chaitra; but the Hetu, wealth or money, exists in him in the relation of possession, is related to him as a possession, *i.e.* is possessed by him. When we know that wealth exists in the latter relation, we can infer the existence of happiness in the former relation; otherwise not. We know, *e.g.* that money exists in the chest in the relation of contact; from this we cannot infer that happiness exists in the chest in the relation of inherence. Vyápti thus always supposes two relations which determine the coexistence of the Hetu and the Sádhya.

The qualification of negation as "not coexisting with its correlated position" applies to the definition given by Siromani as well as to that given by Ganges.

With regard to these definitions the reader must not ask about the origin or ground of the knowledge of Vyápti. It would be irrelevant to ask here as to how the knowledge of the coexistence of two things under a certain condition, on one or two or any limited number of occasions, can give rise to inference. I am giving here the bare substance of that chapter of Hindu Logic which deals only with the definition of Vyápti, and hope to be allowed to take up those questions on some future opportunity. Unless we have the knowledge of Vyápti in the Hetu we cannot infer anything from it. The question with which we have been concerned in this paper was, what does "the knowledge of Vyápti in the Hetu" mean? We now see that the knowledge of Vyápti means the knowledge of the coexistence of the Hetu and the Sádhya in a limited number of cases under a certain condition, *viz.* that negations in those cases are non-determined by the Sádhyatá-determining attribute and relation.

Thus we see very clearly that the Hindu theory of inference is essentially the same as Mill's theory. For he also contends that inference really passes from particulars to particulars. It should, however, be noted that knowledge of *mere* coexistence is not the basis of Inference. Inference is in reality based upon the knowledge of coexistence under a condition.

*The present plan of teaching Hindu Logic in India.* The definition of Vyápti is an important and difficult part of the Hindu logical system. It has given rise to a long discussion embodied in a large number of big treatises full of intricate and abstruse matter. After the five definitions referred to above, Ganges criticises two others given by a logician of the name of SinhaVyaghhra (lit. Lion-tiger). The twofold definition is called after its author's name. After these he criticises a dozen of others. The part of the text which contains this criticism is called the *Purbapaksha*. So that in all he criticises

nearly a score of definitions before giving his own. The plan of teaching this part of Logic, followed in the place from which I write and which has for the last three or four centuries been regarded the centre of Nyáya learning in India, is as follows. The students begin with a very brief compendium of Vaisesika Philosophy written in verse in order to help the memory. The name of this text-book is *Bhásháparichchheda.* It is admirably fitted for the purpose of introduction. They do not at first read the notes on it, by its author, which contain an exhaustive treatment of the whole system. At first they get the whole or a considerable portion of the text by heart, having previously learnt its meaning. But they never read any portion of the text of Ganges without the elaborate notes on it by one or other of the annotators.

After reading the *Bhásháparichchheda* they go on to the *Vyáptipanchaka* or five Vyáptis, referred to above, together with the notes on it by Mathuranáth, without learning the part of Ganges' text before that, which, as being more difficult, they read after they have made some progress. The "Five Vyáptis" takes about two months' regular study to finish. Then come the Lion-tiger definitions, which can be finished in a couple of days. The third treatise which the regular logical students have to read cannot be finished in less than a year; it takes generally more than a year of regular study. This treatise is called *Vyádhikarana,* a treatise which has its origin in a perverse love of argument. An absurd argument of a logician of the name of Sandoḍa, which is refuted here, has given rise to this chapter of Hindu Logic. I consider the study of this chapter to be a cruel waste of time, a sacrifice to the perverse love of argument that prevailed in the period of Hindu Logic which we are just passing over and which I am inclined to call the scholastic period of Hindu Philosophy.

Then comes the *Purbapaksha,* the criticism of a dozen definitions referred to above. This treatise is generally omitted. Even if read it would not take more than a month. Thus after having read criticisms of definitions and matters somehow or other connected with them for a period of nearly a year and a half, the student is allowed the privilege of studying the definition of Ganges himself, *viz.* the Sidhántalakshana given above.

This plan seems to me to be mistaken. Beginners should be allowed to read the final definition at first without being taken into the intricacies of criticisms, replies and rejoinders, which more advanced students can read in less time if they are inclined to do so. The plan of teaching is mainly responsible for the neglect of philosophical study and scarcity

of original philosophical thinking in modern India. No philosophical student can help being struck with the fact that as a rule the more ancient a philosophical work, the more interesting it is by reason of its variety of subjects, its candid unbiassed treatment, its freedom from the service of any particular religious doctrine, and the total absence from it of any indication of the spirit of scholastic disputation; whereas, as Pandit Mahámahopádhyáya Mahes Chandra Nyáyaratna truly remarks, "a hair-splitting subtlety in the discussion of meanings of terms is the distinguishing characteristic of modern Nyáya." Yet however till recently, "the works of Ganges Upádhyáya and his followers so completely superseded the ancient Nyáya works that very few Pandits of the present day even possess copies of these works." The pulsation of a reaction in favour of the ancient system and a just repugnance to the subtleties and technicalities of modern Nyáya is beginning to be felt. And it can be hoped that we shall soon pass over the scholastic period of Hindu philosophy. For the desire of returning to the old giants of ancient philosophy, one of the principal factors to which modern European philosophy owes its origin, is at work. But before the indiscriminate contempt characteristic of a reaction the new system, which is not without its merits, may, I am afraid, be neglected more than it deserves. To save it from being completely set aside, the plan of teaching should be thoroughly reformed, and the student should be taught only those portions of Ganges' work (not merely of the part on inference) which contain his own opinions, and arguments in support of them. And only those portions of the commentaries should be read which bear *directly* on them and which give the most reasonable and on that account the most universally accepted interpretations of them. It would be to the greatest advantage of logical study in India, if a text-book could be published to serve this purpose, and introduced into the list of books required to be read for the examinations which are now held at various centres. As yet there are a few (but, alas! only a few who are fast disappearing) who can undertake such a heavy task, and are competent to teach the Hindu doctrine of proof on this plan. But they are hardly those who will look with any favour on such a reformation, such is the obstinate vitality of the perverse love of hair-splitting disputation.

## III.—ON THE SUPPOSED USELESSNESS OF THE SOUL.

By F. H. Bradley.

The following considerations must not be taken as quite expressing my own beliefs, nor again are they offered as original. But they will perhaps bring some thoughts together in a way which may be useful.

There is a view as to the connection between body and soul which seems to grow every day more in fashion. On this view the bodily sequence is wholly independent of mind. It goes on as it would go on if nothing psychical were there. The soul is somehow an adjective which makes no difference to its substantive. It is the whistle of a steam-engine which has no effect on the engine's movement; for the soul is somehow that kind of whistle which expends no steam.

Now, though this view is respectable, it seems none the less ridiculous, but my first object is rather to show its connection with another prevailing doctrine. I refer to what we may perhaps call Darwinian teleology. Everything which on a certain scale persists must be taken as useful. It was not made to be useful, but, if not useful, it would by now have been unmade. So that whatever on a certain scale has arisen and has persisted must certainly be useful. Now, if this doctrine is good, I do not see why we should not apply it to the soul, unless we are prepared everywhere to make the soul an exception to everything except disadvantage; and no one, I believe, has as yet openly contended for that principle. But, when the Darwinian view is applied to the soul, the soul apparently must be of service. Pleasure and pain, volition and thought must after all be there for something, and must after all do something. For otherwise by this time they would surely be no longer there at all, since, if so, they would be varieties useless and yet persisting.

The above reflection is obvious and, I presume, must be answered as follows. The soul is useless, but on the other side

the soul costs nothing. To be pleased or pained brings no good but brings also no harm. And thus the soul, being something which with regard to advantage or hindrance is nothing, falls wholly outside the Darwinian doctrine. But this answer can hardly stand unless we are ready to accept the old wives' story of the whistle blown and blown by nothing[1]. And if we hold to the belief that something comes from something, and that from nothing nothing comes, we shall have to seek for a less irrational proof that the soul may be useless.

If we consider that, on any view, the soul covers a large area of fact, if we decline to believe that this mass of existence is produced from and costs nothing, if we reflect further that fruitless expenditure is disadvantage which (it seems) must eventually destroy itself—we shall find it impossible to take the soul as being of no service at all. The soul must be useful, but it may be useful perhaps in a qualified sense. It may afford an advantage perhaps which is but conditional, provisional and temporary. The soul in other words, though of service now, in the end may become useless. And in the end (we must add) having become useless the soul will cease. We can find also some further reason to expect such a supersession of the soul.

Every organism, we may anticipate, will become perfect. They will all in the end be adapted to their environments, and will be internally free from defect and jolting. But, if the soul is consciousness, the soul in its essence seems to involve imperfection. For consciousness consists in a process of distinction and relation and it implies some collision. That which later we know as choice between incompatibles is at first certainly not present, but at the very dawn of consciousness we have some struggle between suggestion and fact. And if it were not so, and if we felt nothing of a baulked attempt, we never, it would appear, should become conscious at all. But consciousness, so living through friction, through delay and wavering, tends, as defects are removed, itself to pass away. Thus habits of action and of perception, acquired haltingly and with painful prominence of each struggling detail, become automatic more and more and with that unconscious. From which we conclude that, when on the whole adaptation has grown perfect, consciousness will have become superseded wholly.

This conclusion, if correct, seems the solution of our difficulty. Consciousness, though useless (we may say) both in principle and in prospect, will none the less be at present of service. Or at the least it will be the necessary accompaniment of what is useful. It will be that crying of an imperfect machine which

[1] Surely we have not got to take *this* as one of "the fairy tales of science."

arises from friction. This friction is expensive to the machine, and in principle it is not useless merely but positively injurious. But because inseparable from the machine at a certain stage of its development, the friction must be taken as an advantage to what owns it. But when by Evolution machines grow perfect and friction gradually is reduced to nothing, consciousness then will meet the destiny assigned to it by principle. It will have become useless wholly, and, with that, will cease to exist. And, with that, the world will have become perfect and purely physical.

There are however some objections which this view perhaps too much ignores. (i) For it has assumed first that the soul is the same as consciousness. But consciousness, with its distinction of subject from object and of objects from each other, is perhaps after all not so wide as sentience. But if the unconscious may be psychical, perfection after all need not be physical merely, but may be a sentient whole in which the oppositions of consciousness are transcended. And this psychical fact cannot be proved as above to be useless even in the end. (ii) Further, even if the principle were not unsound, the detail seems refractory. Without a process in time it is hard to see how any machine is to work and go. But with a process the door seems opened to accidents and jars, and so to outbreaks of consciousness. And since new machines have, I presume, to grow, and since old machines will, I suppose, wear out, perhaps after all perpetually there must be infantile and senile relapses into soul. And in short the Evanescence of Imperfection seems little better than the craze of a theory-monger. The facts rebel, and the principle seems mainly prejudice. The sentient machine of the Universe, though perfect, may by its essence involve collisions and friction between its parts, together with an outcry of consciousness. And what is above consciousness may still contain it as a necessary factor, while consciousness thus always, and yet never, is superseded.

The view of the soul as the result of friction seems in every way untenable, and to be oneself the self-awareness of jolts in a half-finished machine would be too stupid altogether. The distinction we draw between friction and work depends after all, I suppose, on a selected point of view. And if we wish to insist that the harmonious movement of a physical machine is by itself the one work, and that all beyond this is injurious or at least superfluous—perhaps we might begin by asking whether our point of view is rational or arbitrary.

Living once near a quarry on a hill I was persecuted by a strange noise. It came from a wooden brake screwed against the wheels of descending and loaded carts. And listening to

this noise I fancied it the cry of some soul forced at intervals out of matter by too rude motion. And I tried to imagine the thoughts of such a soul and the views which it might take of its own meaning and destiny. It would perhaps at first feel sure that its own feeling was an end in itself, and that except for the sake of that or something like it nothing existed. But after many vagaries this soul might come to very different results. It might reflect perhaps how it's self was engendered by accident and defect, and how a perfect cart would admit no friction nor be liable to any soul. A perfect cart would be motion unhindered, harmonious and silent. Or this soul might think itself in any case but parallel to the physical motion. It might consider itself to be certainly in a sense dependent on the cart's movement, yet not so as to be produced at its expense, or as in any way to make any difference to it. But it struck me then that this last view was perhaps the most foolish of all. For that something could come from nothing and lead to nothing, or that something could happen with no expense to anything, remains always irrational. And I should dare to repeat this though I had thrown at my head some word longer even than "psycho-physical."

## IV.—EMOTIONS *versus* PLEASURE-PAIN.

By Henry Rutgers Marshall.

In the 2nd chapter of my book, *Pain, Pleasure and Aesthetics*, I considered the nature of the Instincts and Emotions. I there took a "*genetic*" point of view: and held that if we grant the validity of the hypothesis of development by contest and survival we should expect to find certain coordinated instinctive complexes immediately reactive upon the approach or the departure of disadvantageous and also of advantageous objects. We should expect to experience (*a*) a wide instinctive reaction determined by the approach of an object which has in the past been *advantageous* to the individual of the race although it may not be known to the individual to be so: a condition of receptive expansiveness. We should look (*b*) for a quite different but equally wide instinctive reaction arising upon the approach of an object which in the past has been *disadvantageous*: a condition of general contraction or shrinking, as it were. We should expect to find other corresponding mental phases differing in quality and elemental width, which would appear (*c*) upon the departure of the advantageous and (*d*) upon the departure of the disadvantageous. Now if it be argued that there is a coincidence between nervous activities and mental changes we should surely expect that, in connection with these more or less definitely coordinated instinctive activities, corresponding mental states would appear, and these for convenience we may call "Instinct Feelings[1]."

We should therefore expect to find an "instinct feeling"
(*a*) arising upon the *approach* of the *advantageous*; another
(*b*) appearing „ „ „ *disadvantageous*; „
(*c*) arising „ *departure* „ *advantageous*;
and still another
(*d*) appearing upon the *departure* of the *disadvantageous*.

[1] The word "feeling" is used here in its broad sense as equivalent to "mental experience."

Now as a matter of fact we do find certain complex mental states which we call "Emotions" that arise spontaneously and re-actively, and apart from any influence of our reason or will, and which correspond to the conditions above mentioned.

(*a*) Joy, arising upon the approach of the advantageous.
(*b*) Dread, „ „ „ „ disadvantageous.
(*c*) Sorrow, „ „ departure „ advantageous.
(*d*) Relief „ „ „ „ disadvantageous.

If we follow out the same line of argument in relation to our less passive life we shall be led to a fuller comprehension of the nature of the Emotions as a whole.

(*e*) Love, we find to be connected with a tendency to *go out toward* an advantageous object, in receptive mood.
(*f*) Fear, „ „ „ with a tendency to *flee from* a disadvantageous object.
(*g*) Anger, „ „ „ with a tendency to *act to drive away* a disadvantageous object;

and we might also expect to find

(*h*) an Emotion connected with a tendency to act in such a way as would attract advantageous objects to us.

But in fact we find no Emotion (*h*) such as seems necessary to complete the symmetry of our scheme. This fact may be accounted for by supposing that this instinct *to-act-to-attract* is one which does not lead to any *immediate* reactive spasm, so to speak; and that the reactionary effects and the consciousness corresponding thereto would therefore be slow to appear: and further by supposing that these acts brought about by this instinct may be so varied that no fixed mental elements would result from the instinctive reaction: for with the Emotions *a, b, c, d, e, f* and *g*, just considered, this immediacy of reaction, and a certain fixedness of the elements involved in each successive reaction, must be supposed to determine the attention to, and the definiteness and fixity of, the "instinct feelings": without this definiteness and fixity we could not expect them to have gained emotional *names*: for the attachment of names is a very late step in our racial life, whilst the instinctive reactions are determined by the experiences of untold generations of our ancestry before even the semblance of man's form had appeared.

That this supposition as to immediacy, and fixity of elements, in the reaction is not unreasonable appears upon considering the case of the well recognized *imitation-instincts* which must have corresponding "instinct feelings," but to which, if our argument be true, we should not expect to find emotional names attached, for the reason that the activities involved are

not immediately reactive nor of a definite fixed nature. As a matter of fact we have no emotional states corresponding with the imitative activities, although the *imitation instinct* is recognized by all to be of fundamental value to us.

What we are now led to ask therefore is this: whether there are any impulses within us that lead us, blind as to the end in view, to undertake activities that will result in the attraction of advantageous objects to us.

If there be such impulses we should expect to find in the first place tendencies to actions which would merely result in the attraction of attention to the individual: and such tendencies recognised in marked degree amongst the higher animals are clearly found in the human race in its barbaric state: nor can they be said to be totally lacking in the human species of higher types in our day. Prof. Baldwin suggests that we call these, "self exhibiting reactions."

Secondly, we should expect to find tendencies to produce objects or objective conditions which should attract by pleasing; and, thirdly, we should look for tendencies to act to attract by the production of results useful to those whose attraction is desirable.

The third class of tendencies is easily identifiable with those impulses to disinterested benevolence which are so prominent in modern life; and it may be noted here that neither the first nor this third class of instinctive tendencies results in immediate or definite reactions such as would lead us to expect the attachment of emotional names to their psychic counterparts.

What shall we say of the second class? Is there any widespread instinctive tendency within us which, with no knowledge on our part of the end in view, still does work for results which shall please others, and which has no other *raison d'être* than this pleasure giving; an instinctive tendency so slow in its reactionary development, and resulting in activities of so varied a nature, that no emotional name should be expected to attach to the reaction?

I think we have it in the blind instinct to produce Art works: in what is usually called the *Art Impulse* but which I speak of generally as the "Art Instinct." The Art Instinct certainly is blind to any end in view except the expression of the ideals which are present to the artist's mind; it none the less does have the effect of producing objects which delight and which attract by pleasing: moreover it certainly has in this a most valuable function, *viz.* that of *social consolidation*; and apart from this no evident *raison d'être.* Furthermore the impulse works itself out through slow and diverse processes

which in their nature could not bring distinct and immediate reactions such as seem to be necessary where emotional names are to become fixed.

Certain criticisms upon the above scheme[1] lead me to think that it will be desirable to make a brief statement of my view in this particular in a manner which will make clear some points I have apparently left obscure in the treatment in my book.

It seems to me that the most logical view to be taken of the relation of mind to body is this; that each and every physical reaction has its coincident in mentality; only part of that mentality however having the characteristics which enable us to consider it as a conscious object, or in other words which serve to make it appear as an increment to our Ego. If this be granted then all instinctive reactions must have their co-incident "instinct feelings" as I have called them, these "instinct feelings" being mental complexes, some elements of which come clearly into consciousness and some of which do not. An "instinct feeling" is a pulse of mentality.

As a matter of fact we recognize an indefinite number of these instinctive reactions, but to comparatively few of them do we by common agreement attach distinct names. A certain narrow set of these "instinct feelings" we call Emotions, and upon examination we find, as we have seen, that these Emotions have two marked characteristics: 1st, in the main, fixed relations exist between the elements reacting; and 2nd, the reactions follow *immediately* upon the presentation of objects or of objective conditions.

We may fairly say then, I think, that each "instinct feeling" which is definite enough to be named as an Emotion, involves a more or less definite pulse of consciousness, a relatively fixed "content" complex, corresponding to instinctive reactions; and this, quite apart from any theory as to the functioning of outward or inward "waves of expression." As I have wished so far as possible to avoid cumbering my argument with questions in dispute, I have purposely expressed no distinct opinion in reference to this controversial point, as it does not directly concern my argument.

But it is interesting to consider the fact just noted; *viz.* that relatively few of our recognized instinctive reactions have emotional names attached to them, and this, as I have said above, I surmise to be because the unnamed "instinct feelings" are coincidents of instinctive actions that are not immediately reactive, or which do not involve in the main fixed relations

[1] Conf. Prof. J. Mark Baldwin in the *Psychological Review*, I. VI. p. 619 ff.

between the elements reacting. On this supposition it is easy to account for the fact that the "Imitation Instincts," the "Self Exhibiting Instincts," the "Benevolent Instincts," and the "Art Instincts" have no emotional names attached to them, as they have no recognized strictly emotional mental phases connected with them.

Prof. Baldwin has held[1] that I overlook the fact that "the greater the fixity of habit the less the consciousness";—which would naturally lead us to expect that the Emotions under my definition would be unconscious: but here I think he himself overlooks the basic facts which lead to his statement just quoted; these facts implying indeed that thoroughly fixed habitual reactions must usually become unconscious, but on the other hand implying that in their very nature the particular kind of fixed reactions which are the coincidents of emotional reactions must as a rule appear in consciousness.

Psychologists are apt to speak of the disappearance from consciousness of the psychic coincidents of physical actions as though these latter were surreptitiously forced out of sight by a *quasi* Herbartian opposition; or more often as though, with less invasion of their individual rights, they disappear by a sort of mental *endosmosis* through some kind of psychic *septum*, which is spoken of as the "*Schwelle*" or "*threshold*"; and that they reappear above this *septum*, if ever, only by a process of psychic *exosmosis*. But in my view it is more logical to suppose that the reactions never lose their *mentality*; that this mentality exists as often as the physical action is called forth; but that in certain cases this mentality fails to affect consciousness; either because of an actual disruption of the physical connection with the brain which is the centre of the consciousness that determines our thinking *ego*; or perhaps because of a disconnection caused by lack of commensurability of rhythm with the rhythm of the brain action; or because of failure to gain those qualities which enable mere mentality to become objective to the *ego* in reflective consciousness.

Apart from the disconnections above mentioned, the activities whose coincidents disappear from consciousness are those which are not subject to unusually forceful reactions, and especially those which become rhythmically regular in action, the regularity having produced a perfect adjustment of nutritive supply to stimulus demand. As an example of these states we may mention the instinctive activities connected with respiration; which have become fixed within us through the inheritance of untold ages, which are thoroughly rhythmical, and which not

[1] *Op. cit.* p. 619.

often in normal life call for powerful reactions. But once bring about inequality or especial forcefulness of these respiratory reactions, and notwithstanding their ordinary unconsciousness they will immediately make themselves painfully apparent in consciousness. So indeed is it with the mental side of all the physical activities which are usually out of consciousness:— for instance, the mentality connected with intestinal action.

But the Emotions which we have under discussion are in their very nature dependent upon irregularity of recurrence and forcibleness of reaction. The latter characteristic, connected with the immediacy of the reaction, must indeed be retained as part and parcel of the Emotion if it is to remain of marked protective value. If the emotional activity is to be effective to the individual as he is related to the race it is of the utmost importance that it should continue to be *immediate* in its reaction and therefore forceful.

The irregularity of recurrence of emotional reaction is at once recognizable: but as a matter of fact if we bring about regularity of recurrence of these Emotions and reduce the force of their reaction, we find that even they lapse into unconsciousness. The hard worked boxing master finds it impossible ordinarily to strike his opponent with conscious anger. The marks of every-day family affection are not accompanied by the vivid emotional thrill that was yielded by the lover's embrace in the beginning of his courtship. In fact the typical Emotions are irregularly called forth and they are effective only because of their forceful reaction: where they become regular in action and lose their forcefulness they grade into unconsciousness as all other mental states do.

It becomes apparent therefore, it seems to me, that the "Imitation Instinct," the "Self Exhibiting Instinct," the "Art Instinct," and the "Benevolent Instincts" cannot be expected to become "emotional" in character unless, or until, they become immediately reactive; and unless, or until, they become relatively fixed so far as "content" is concerned.

Now these states of which I have been above speaking as "emotional" have evident racial significance in so far as they relate to the organism which reacts as a whole; and in this sense they may be called "primitive," for their life history dates back to the beginnings of *organic* life. But Pleasure and Pain, I have argued, are indices of effective or ineffective action in specific *organs* and therefore relate only indirectly to effectiveness or ineffectiveness of the individual as a whole, and much more indirectly to the individual in his relation to his race.

Pleasure and Pain thus appear as "primitive" in a much more fundamental way, in a much deeper sense, than the

Emotions, and I am free to confess I now see that it would have been better had I expressed this view clearly in my book instead of making the general statement, that "in both cases" (those of emotion and pleasure-pain) "we are able to trace their genesis back to the earliest developments of consciousness." I made this general statement however without thought that it might be interpreted to mean that I considered the genesis of Emotion and Pleasure-pain to have been coincident in time, or that I considered the advantage and disadvantage towards which, and from which, they guide to be of the same type. I stated the case as I did because I wished to avoid polemical discussion on points which were upon their face extraneous to the subject matter of the argument I was making: it being merely needful in that connection to show why it was natural that psychologists in the past had confounded the very diverse states—Emotion and Pleasure-Pain.

Let me now say a word about the genetic form of argument above referred to. I hold very strongly to the doctrine already stated in my book that the value of the genetic argument, doubtful even as far as I carried it, becomes more so the further we proceed, because of the uncertainty as to the history of our racial development. I remember well a conversation with Prof. Croom Robertson, which convinced me of the superior insight of the man, during which he said to me that he considered that developmental doctrines had thrown all the light they could shed upon psychology until we had further elucidated the essential nature of psychic processes as we experienced them. It is quite possible that since that day this elucidation may have been carried far enough to warrant us in turning again for light to genetic theories: but it must not be forgotten that in psychology, as in archæology, the further back we go the more we are compelled to depend upon unverifiable hypotheses; and whilst I grant great *speculative* value to developments of thought in this direction I am free to confess that I do not think such speculations can have argumentative force unless they clearly fall in line with other lines of reasoning. In fact I should not have presented the schematization of the Emotions as I did had it not been that I found it corroborative of theses upheld by many other arguments and by many observations of fact, and had it not thus appeared that the probability of the correctness of the schematization was strengthened in the very fact that it did fall in line with the resultants of other forms of argument.

I still hold however that the genetic argument must be

used with great caution, and must be considered speculative rather than decisive.

Turning to my argument for the dualism between Emotion and Pleasure-Pain I think it will be well for me to say a word about the current tripartite division of mind, which is principally influential in leading psychologists to class Pleasure-Pain and Emotions together under the class "Feeling."

I have held that there is no adequate evidence in favour of this doctrine. It had its inception in metaphysical hypothesis, and has not been built up on solid psychologic foundation. The principal argument for the division is that which depends upon the notable subjectiveness of Pleasure-pain and Emotion, which brings about the classification of the two together under "Feeling," of which I have just spoken. Of this doctrine I shall treat later, but I cannot help quoting here a few words from Herbart's *Lehrbuch*, §. 198, in reference to the notion of a subjectiveness set off against each objectiveness, upon which notion this tripartite division is founded. "It is a powerfully productive and persistent error of Idealism," Herbart says, "that the *Ego* sets itself over against the *non-Ego*: as if the thing were originally burthened with the negation of egohood. Under such a view there would never exist a *thou* nor a *he*: never would another personality be known other than one's self. Rather, is it true that whatever is grasped within is, so far as possible, carried over into what is outside of us. On this account, there appears with the *Ego* at once the *Thou*: and almost at the same moment with both the *We*: which fact Idealism forgets and must forget unless it wish to be awakened from its dream."

The doctrine of tripartism involves the contention "that feeling," to use the words of Prof. Dewey, "is unique and unsharable...cannot be defined...can only be felt." Of course I am perfectly willing to grant that there is a *possibility*, but of metaphysical interest only, that there exists this "feeling" capacity which we feel but never know; that feelings, as Dr Jas. Ward says, "are not known by being made objects of reflection" but that "we can only say that we know of them by their effects, by the changes, *i.e.*, which they produce in the character and succession of our presentations."

I have said that there is this *possibility* of the existence of this realm of "feeling"; but I must confess that from the psychologist's standpoint I think it does not amount to a probability. There is as much, and no more, ground for such a supposition, it appears to me, as there would be for the postulation of a special region of "attention," *quasi* mental only, which

one might claim to be known only by its effects; or for the postulation of a special mind activity to grasp "reality," let us say: reality being *known* only by the effects, *i.e.* the changes which it produces in the character and succession of our presentations.

In similar manner it seems to me we might postulate a large number of other mentalities, if we may so speak of them; holding that they are known only by their effects, which effects are the special characteristics of mental life with which psychology deals.

This process of postulation seems to me a strained one, even from the point of view of metaphysics; and so far as I can see should in no event be allowed to affect psychology, which has to deal almost exclusively with what *can* become objective in reflection: a correct psychology using postulates which depend upon argument from sources other than experience in reflection, only when these postulates seem forced upon us by overwhelming evidence.

In a "note" published in *Mind*, N. S. II. 6, Miss C. A. Foley, in describing the late George Croom Robertson's teaching, makes the following statement; "after setting forth the nature of ethical philosophy and its connection with logic and æsthetics, he opened thus. The fact that we *can* distinguish these three regulative bodies of doctrine,—mutually independent,—mutually unresolvable,—exhaustive, is to be regarded as a decisive argument for the tripartite division of mind.

"In psychology it is often hard to isolate the three, and secure independence for them, but we can distinguish well enough that Intellection in the end has to be made True, Conation in the end has to be made Good, Feeling has to be raised to the level of the Beautiful, and we cannot add thereto. The summary is exhaustive."

This is the only statement of this special argument in favour of the tripartite division of mind that I remember to have seen, although long before Miss Foley's notes were printed it had occurred to me as an argument which might be made, and I had fully considered it. I did not discuss it in my book, for at the time the chapter relating to this subject was written no expression of it had reached my eye; and when I saw the note I hesitated to add reference to it, for I felt that the book was already overcrowded with polemical discussion and that it was not worth while then to raise a point which was not likely to be brought forward in objection by others, and which I had already considered and answered to my own satisfaction. I think that in this connection however it may be well to

explain the reason why I do not consider the argument to be forceful.

In order to show that this "exhaustive threefoldness of the regulative bodies of doctrine," as Robertson called it, is not a conclusive argument for the tripartite division of mind, I think one ought to be able to show what is the probable basis of this threefoldness of doctrine and that it can be conceived to have arisen without any dependence upon the supposititious tripartite division of mind. This I shall now attempt to do.

It seems to me that in our search for relative stability,—for reality,—in mental experience, we gain the general conception of the True. The conception of Truth is applicable to all of our mental life, so far as it presents to us the conditions of reality; that is so far as it presents stability in relation to the field in connection with which the special mental complex under consideration is conceived.

Again; for very obvious reasons, there arises naturally within us a distinction between receptive and reactive states of mind; between psychoses of impression and psychoses of expression. We undertake then to reach the real,—the relatively stable,—in these two great regions of experience.

*Impression* however gives us the most variable and relatively unpredictable of mental phenomena in Sensations, which are produced by the most variable of influences upon us from without ourselves. Some quality which goes with all of these Sensations, and which is determined by conditions of the organism rather than by those of the environment, and which quality might be held in relative stability, would be naturally seized upon here for use in our search after reality, and such a quality we have in Pleasure. But relatively stable Pleasure I have, in my book above mentioned, shown, I think, to be of the very essence of Beauty; hence it appears that the search for the real in the region of *impression* gives us the notion of the Beautiful.

If, on the other hand, we search for the real,—the relatively stable,—in the region of *expression*, our thought is turned to the mental states which we conceive of as the impulses to this expression; and we look therefore for relative stability of impulse, which in its turn gives us our ethic standards; and we thus obtain the conception of the Good.

Now, if this argument be correct, it is apparent that the True is a category which relates to all of our conceptions and must therefore relate to the Beautiful and to the Good themselves; and we have evidence of the correctness of this view in the fact that the Beautiful and the Good are always *truly* beautiful, and *truly* good; whilst on the other hand it cannot

be held that all of the true is beautifully true, nor that all of the true can be considered good.

How then comes it that we hold the three in a trinity? Emphatic *impression* and emphatic *expression* when considered with care do not cover all of our mental experience; a residuum remains which is neither identifiable with the one nor with the other. In the residual region, in the very nature of the case, there being no impression, the category of the Beautiful will not obtain; and there being no expression, the category of the Good will not obtain: but the category of the True, which is all pervasive, will still hold, and we thus obtain a very special emphasis of the reality of Truth in the broad region of what is called intellectual activity; so great an emphasis of it, in fact, that we come ordinarily, yet quite improperly, to narrow the realm of Truth to intellectual phenomena: *i.e.* to phenomena which are neither notably impressive nor expressive. Thus, properly speaking, the True is more fundamental than the Beautiful and the Good, but as the Beautiful and the Good occupy so emphatic a part in our experience, we place them on a par with the wider reality Truth, which appears marked where the Beautiful and the Good are wanting.

It thus appears, it seems to me, that we are able satisfactorily to account for the existence of the "exhaustive threefoldness of the regulative bodies of doctrine," of which Robertson spoke, without recourse to the hypothesis of the tripartite division of mind. In fact I am much inclined to believe that the existence of this trinity of Realities has been the main basis of the statement of the doctrine of tripartism, although there is certainly a further basis in psychologic experience which I discuss below.

Now let us consider in part the argument for the dualism between Pleasure-Pain and Emotion which I defend. Pleasures and Pains are surely not identifiable without reserve with the Emotions if we mean to describe by the word "Emotions" those states of excitation of which the most typical cases are Joy, Sorrow, Anger, Fear, Love, Surprise, etc. Nor can it be shown in any way I feel sure that the "essence of Emotion is Pleasure and Pain." As Dr James so well says[1] in his discussion of this special statement by Dr Worcester, "this is a hackneyed psychological doctrine but...one of the most artificial and scholastic of the untruths that disfigure our science." The uninitiated student of psychology indeed who takes up the ordinary standard text-books will come naturally to the opinion

[1] *Psychological Review*, I. p. 525, September 1894.

that the best recognized authorities,—Professors Bain and Sully for instance[1],—*do* in some way class Pleasure-pain and Emotions together.

I would not claim that either Prof. Bain or Prof. Sully attempts to carry out anything like a thoroughgoing classification of "Pleasure and Pain" under "Emotions" nor on the other hand of "Emotions" under "Pleasure and Pain," but they surely are representative of a large body of psychologists who do think there is some basis for the identification of these two classes of psychic phenomena.

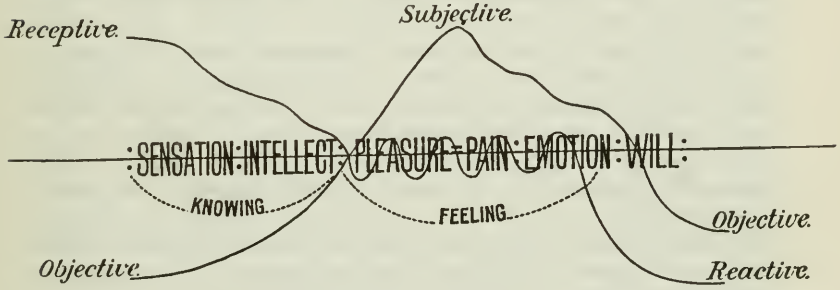
But if this doctrine has become current it must have some basis in psychologic experience, and we are compelled to ask how its existence can be accounted for if it be not valid.

This doctrine, in my opinion, has become current because of our attempt to bind together two distinctly diverse empirical methods of classification, both of which have been and are still most valuable aids in our study of psychic life, but which should properly be treated as diverse.

We have first a natural bipartite classification determined by the distinctions in consciousness which appear (1st) in the attitude of *receptivity from* our environment, and (2nd) in the attitude of *reaction upon* our environment.

We have secondly a more subtle classification, also bipartite, according to which *objectivity* is opposed to *subjectivity*. It seems to me that it is in the attempt to combine together these two forms of classification that we reach the current tripartite division of mental phenomena into Knowing, Feeling, and Willing.

I think the argument that is to follow may be made clearer by the use of a diagram, which, while somewhat fanciful, some may say, is on the whole accurate enough for our purpose here, and will serve to render clear the distinc-




[1] I have already spoken of this in a discussion in *Mind*, N.S. Nov. 1894.

tions I make. The line on which is printed the words Sensation, Intellect, Pleasure-Pain, Emotion, Will, the names of the most marked natural divisions of mental phenomena, serves as a mere line of demarcation. Above it, so far as the *receptive-reactive* quality is concerned, all is receptive; below it all reactive. So far as the *subjective-objective* quality is concerned all above it is subjective; all below it objective. By the two curves I mean to indicate the regions of consciousness in which we notice the emphasis of each one of these two sets of mutually exclusive qualities. Where the receptive-reactive curve vibrates across the line, I mean to indicate indefiniteness in consciousness as to this quality.

It appears from the curves that there is a natural bond between Sensation and Intellect on both the *receptive-reactive* and the subjective-objective classifications: that there is a bond between Pleasure-pain and Emotion on the subjective-objective basis; the receptive-reactive quality being unmarked: that with Will there is a common and coordinate emphasis of the reactive, and also of the objective, after the subjective inception has passed out of consideration.

Knowing and the Willing are the elements in which are emphasized the distinct receptive and reactive characteristics, but Knowing and Willing are not beyond the pale of the objective-subjective distinction. On the other hand Pleasure-Pain and the Emotions are characterized by their notable subjectivity; and it is upon the importance of our subjective attitude in relation to pleasure and pain that some of our masters (Dr James Ward for instance) base their defence of this distinct nature of pleasure-pain: but in fact it seems to me also that the subjective-objective distinction is quite compatible with, although not co-ordinate with, the receptive-reactive distinction; the subjective-objective distinction surely is not limited to pleasure-pain nor to any of its supposed derivatives, but relates also in less clear-cut manner to the phenomena which are usually treated under "Knowing" and "Willing."

The Emotions hold a position which is especially liable to make their classification difficult: for they are notably algedonic, and this connection with Pleasure and Pain leads us to class them on the *subjective-objective* scheme with pleasure-pain phenomena, which on the basis of this subjective-objective distinction, have come to be considered as a class apart; and thus Pleasure-pain and the Emotions are lumped together under the general class of "Feeling." On the other hand the Emotions have also distinct characteristics which lead us to adopt the *receptive-reactive* classification; having a natural tendency to be held together with Will phenomena, as is apparent in the

classificatory distinctions which engaged the attention of philosophers from the time of Aristotle to that day when the weight of Kant's influence fixed upon us the baneful tripartite division.

It is the hidden fact that Dr James' Emotional theory breaks down the connection of Emotion with "Feeling" as *subjective attitude* that leads, I surmise, to the opposition to the acceptance of his view which appears among those who hold to the old time authoritative doctrine of the uncognitive nature of Pleasure-Pain and Will: but it seems to me that even though Dr James be not right in detail he surely has established one particular point, viz. that Emotion is less well classifiable on the subjective-objective scheme and better on the receptive-reactive scheme, as reactive.

I have argued that the typical states which give the word Emotion its distinctive meaning for us all, are those relatively fixed psychoses, which I have called "instinct feelings," which appear in consciousness as coincident with correspondingly fixed coordinations of instinctive activities, arising upon the presentation of determinate objective conditions.

Now if this be true it is certainly clear that the separation of Pleasure and Pain from the Emotions is a psychological necessity; for it is manifestly impossible to hold that Pleasures and Pains are "relatively fixed psychoses," or that they "correspond to fixed co-ordinations of instinctive activities," or "arise upon the presentation of determinate objective conditions." Or, to use Professor James' terms, it is clearly impossible to think of pleasures and pains as "our feelings of the bodily changes which follow directly the perception of existing facts."

Moreover, Pleasures and Pains are *not* determined by percepts as Emotions are; they are part and parcel of the elements which go to make up these percepts, as well as of the simpler states which we call Sensations, to go no further. Again, pleasure-pain modes do not differ radically with the differences of content to which they are attached, as Emotions do. The Pains of sorrow and the Pains of fear are not essentially diverse, nor are the Pleasures of love and those of triumph opposed in any way, notwithstanding the great distinction between the states to which they are attached. Moreover, the inhibition of the expressions of Pain and of those of Pleasure produces no reduction but more often an aggravation of the Pain, and certainly does not exclude the Pleasure: but with the Emotions, inhibition of expression at once produces a deduction from their very essence. Again, pleasure-pain modes cannot, with the least degree of certainty, be brought about by will or by accident, through the stimulation of the activities which have

before brought them to us, as Prof. James has shown to be possible to some extent with the Emotions. The identical objects, the very same sensations which on one day give us Pleasure on another day produce Pain.

It becomes apparent then, it seems to me, that the true relation between Pleasure-pain and the Emotions is this. The Emotions are complicated psychoses which almost invariably involve either repressions or hypernormal activities, either of which are determinants of Pleasure or Pain. The Emotions as a class, therefore, must be notably algedonic, as we find them; but this fact surely gives us no logical ground for the treatment of the "Emotions" as a sub-class under "Pleasure and Pain," nor of "Pleasure and Pain" as a class under "Emotions."

## V.—ON THE RELATION OF ACCOMMODATION AND CONVERGENCE TO OUR SENSE OF DEPTH.

By E. T. Dixon.

In the number of the *Zeitschrift für Physiologie und Psychologie der Sinnesorgane* which was published in May last, Dr Franz Hillebrand published an interesting article under a title of which that above this may be taken as a translation. He commenced by pointing out that no binocular experiments could establish a connection between the convergence of our eyes and our impressions of depth in the visual field, as we can never exclude the possibility of judging the distances of objects, relatively to the point of fixation, by means of 'crossed' and 'uncrossed' images—which is what gives apparent relief to stereoscopic views. But, he argued, inasmuch as there is a 'known physiological association' between accommodation and convergence, if it is shown that we can *not* judge distances monocularly, this will prove that impressions of distance are not produced either by movements of accommodation, or by those of convergence. He therefore set to work to test experimentally whether we can judge distances monocularly, or not. He made two sets of experiments, in the first of which the object whose distance was to be judged was moved to or from the observer while he was watching it, and he was then asked which way it had moved. In the second set the object was rapidly moved out of the field of view and another at a different distance substituted for it, and he had to judge whether the second object was farther or nearer than the first. From the first set of experiments he got almost entirely negative results; that is only when the card was moved very rapidly (so rapidly, as he puts it, that the accommodation could not keep pace with the movement) did any of the observers give more right answers than wrong ones. On this negative result he bases his conclusion that convergence has no effect in producing the impression of depth; and he explains away the fact that in the other form of

experiment his observers were all more or less successful in judging, by attributing their judgments to other sources than the convergence or accommodation of their eyes. It appeared to me that this argument was not quite satisfactory, and that in any case his experiments were worth repeating and extending. For the benefit of those who have not read Dr Hillebrand's paper I will briefly describe the apparatus which I employed to do so, though those who have read that paper will see that it only differs from his apparatus in minor points. I will then give some account of the results I obtained, before proceeding to criticise Dr Hillebrand's conclusions.

The apparatus consists of a rectangular wooden frame, 1·3 metres long, supported at a convenient height above the table on two trestles (see Fig.

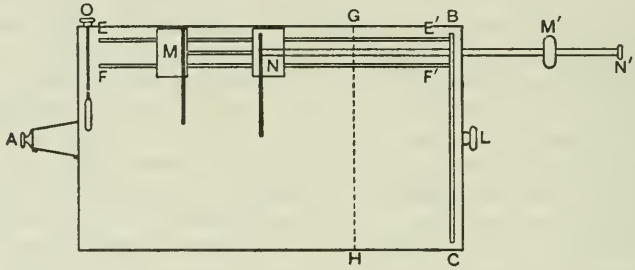



Fig. 1.

1). At one end is an eye-piece ($A$), through which the observer looks, his field of vision being closed by a vertical sheet of opal glass ($BC$), at the other end of the frame. Down one side of the frame runs a pair of railway lines ($EE'$, $FF'$), on which trollies run carrying blackened cards which shut off half the field of view, the vertical edges of the cards being the objects whose distances are to be judged. The sides and top of the apparatus, as far as the dotted line $GH$ in the figure, are draped with black cloth, so that the cards may be moved up to one metre distance from the observer's eye and yet be kept practically in darkness, the observer seeing nothing but the uniformly illuminated white surface $BC$, terminated on the left by the straight uniform edge of the card. For the first form of experiment a single trolly is provided, running on wheels, which carries the card so that its vertical edge passes through the centre line of the apparatus, to which the rails are parallel. Thus as the card moves to and fro its edge does not appear to move laterally—the same amount of white background is always visible. The movement is given to the trolly by a wooden rod passing under the glass plate at the end of the instrument, which is graduated in centimetres to read the distance of the card from the observer's eye. The experimenter, who stands behind the glass plate, has also at command a handle $L$, by twisting which a shutter can be moved across the eye-piece, so that he can put the trolly where he likes before letting the observer begin his observation. For the second series of experiments Dr Hillebrand arranged two cards, on separate sets of railway-lines, both of which were pivoted under the eye-piece, and joined by a connecting rod at the other end of the instrument, so that one

card came into view from the right just as the other disappeared on the left of the field of view. This involved a longer interval between the appearances of the two edges in the median line than seemed desirable, and also made comparison more difficult, as in one case the left half of the field of view was the dark one, and in the other the right. To obviate these objections I arranged two trollies on the same set of railway lines (for simplicity these were not provided with wheels, as they do not move during the experiment), the cards being carried in frames on the trollies which allowed of a small movement horizontally across the field of view. The trollies, as before, could be moved to or from the observer by rods (*MM'*, *NN'*) graduated to read the distance from the observer's eye, but by a simple arrangement the twisting of the two rods together one way or the other, projected one card forward till its edge passed through the axis of the instrument and drew the other back out of sight. To ensure that when the nearer card was withdrawn it actually did pass out of sight (for it might otherwise remain visible, if a little light was reflected off its edge) a shutter was provided in the eye-piece which could be advanced across the field of view (by a screw *O*) until the edge of the more advanced card was all but hidden.

The chief danger to be guarded against in constructing the apparatus is that distance may be judged by the apparent angular distance between two points. Dr Hillebrand points out that this vitiates all experiments in which the object to be judged is a thread, however fine, such as Wundt employed. In the experiments of the first series this is guarded against by having for the object the edge of a blackened card, which is carefully cut so that there are no unevennesses along the edge whose apparent distances might vary. In the second form of experiment there is no danger from this source, but the edges still have to be carefully cut lest they should be individually recognisable by any irregularity. If the card in the first series did not move exactly down the axis of the machine, and there were any noticeable marks on the background, it would be easy to distinguish between a forwards and a backwards motion. For this reason, and to prevent any comparison of the accommodation required for the card with that for a fixed point, the background is made of opal glass, which shows no marks or unevennesses of surface, and care is taken that it is uniformly illuminated. These arrangements are all Dr Hillebrand's, but I found one other precaution necessary in my form of the machine. I was making experiments with an observer who had before seemed almost incapable of judging, when suddenly, much to my surprise and that of some friends who were helping me, he began to answer right every time—in spite of my reducing the distance between the cards to a very small amount. Presently however he explained that he had discovered a trick. He had found that it took much longer for the cards to change from 'far' to 'near' than *vice versa*. I found the reason of this to be that the rod attached to the trolly *M* was not stiff enough, but the part between *M* and *N* twisted when the handle *K* was turned, so that the card *M* always lagged behind *N*. I substituted for the original wooden rods a quarter-inch square steel bar *MM'* passing through a brass tube *NN'* which was slotted down one side to allow the graduations on the steel bar to be read, and also to allow the box-wood ring *M'*, through which the brass tube passed, to be attached to the end of the steel bar. After making this alteration I feel confident that none of the observers formed their judgments from any other data than changes of accommodation, or of blurring in the image of the edge of the card. With the second form of experiment nothing is easier than to cheat any presumptions that might be formed from the sounds made in adjusting the cards—and I always made some

pretence of adjusting them, even if in the end I brought them back to where they were before. In the first set of experiments the observers closed their ears—and as the answers they gave were almost all negative or as often wrong as right, it is clear that the sound did not help them appreciably.

The methods of using the apparatus were these. In the first set of experiments the experimenter placed the card as he wished before opening the shutter and only opened it while the card was moving, closing it again before it got to the end of its run. Sometimes he might open the shutter while the card was at rest, and in these cases we frequently had answers 'moving away' or 'moving towards me.' In the second set of experiments the experimenter adjusted the cards with the shutter closed, and when ready opened the shutter. The observer then looked, and as soon as he had focussed the edge clearly, he said 'now,' when the experimenter twisted the handle and interchanged the cards. The experimenter noted the distances of the cards and the observer's answer—(thus "70—40 farther," which would be a *wrong* answer). In some cases the observer noted his answers himself, silently, but as this precaution seemed superfluous it was not often employed. But the experimenter never told the observer whether he had been right or wrong till the end of a series of observations—generally 20.

The results of the first set of experiments are easily dismissed; for I found, as Dr Hillebrand did, that most observers did not even make an attempt to answer, and that when they did they were as often wrong as right. I did not even find that when the motion was rapid they answered right, unless it was so sudden as to disarrange the apparatus and make disturbances which might easily give them other clues to judge by. There was however one notable exception. My brother, T. T. Dixon, was able to judge with considerable accuracy if the motion was not very slow; but he described his method of doing so as a trick—he said he fixed his accommodation for a time, and let it go by jumps, and so was enabled to answer[1]. In this way on one occasion he got 11 right, two wrong, and five times expressed himself unable to answer. The value of these results seems to me to lie in showing that there is no essential distinction between the first form of experiment and the second, such as Dr Hillebrand seems to assume; and as for several reasons the second form of experiment is much better adapted for giving definite results, I confined myself almost exclusively to the method with the interchangeable cards.

It is not so easy to present the results of the second form of experiment concisely; for the method of tabulating them must depend on the theory which the tables are presented to confirm or refute. If the question to be decided were whether

[1] I may note that my brother is accustomed to rifle shooting at a target, and this may have given him a facility in altering his accommodation at will.

the distance of the card is seen ("*gesehen*") or only inferred ("*geschlossen*") it would be necessary to reject the answers of each observer after the first few, altogether. For even on the supposition that at first the observer "sees" one card to be nearer than the other, as soon as he has had an opportunity of analysing his sensations he will probably notice, or think he notices, wherein the distinction consists, and after that he will seem to be merely "inferring" his answers. But I will leave the further discussion of this point till later, and merely start with the hypothesis that the answers, when preponderantly right, are guided, directly or indirectly, by the difference of accommodation required for the two distances. Accommodation is usually measured in diopters (the reciprocal of the distance of the focal point in metres) and though it does not follow that the muscular effort or movement in the eye is in any way proportional to this, it seems on the whole the best way of tabulating the results to put all answers for distances the difference of whose diopters is the same, together—and this arrangement has the further advantage of being directly comparable with the results given by Dr Hillebrand. He further distinguishes between answers in which the change was from near to far and those in the reverse direction; as Wundt asserted that for monocular vision the latter changes were more easily observable than the former, and I have therefore shown the answers separately in the tables. The answers entered in each column are those where the difference of diopters was not greater than that shown at the head of the column, but was greater than that shown at the head of the next column to the left.

In the first three sets of experiments, *A*, *B* and *C*, the observers had perfectly normal and acute vision. *A* was a friend (Mr Charles Hammick, of Trinity College, Dublin), who was staying with me. He answered almost invariably correctly from far to near, and his right answers preponderated at almost every distance from near to far—his success being far greater than anything recorded by Dr Hillebrand, who does not appear even to have tried with differences of less than half a diopter. Mr Hammick declared at first that the card *looked* nearer or farther, but he could not say what made it look so. After a few trials however he said the way he judged was that the far card looked hazier in outline than the near one. But, being questioned, he admitted that he could see either card equally sharply defined when looking at it steadily[1]. I conclude there-

[1] His sight was tested by Dr Rivers, who found that he was not short-sighted.

fore that he judged further when the new card appeared particularly ill defined *for the first moment*, or when it *took a longer time* for the edge to become sharp. The table shows that he only made two mistakes, and once failed to answer out of 33 trials from far to near, and that one of the errors and the failure were with exceedingly minute differences (96—94 c.m. and 90—89 c.m. respectively). In judging from near to far however he made many more mistakes, but he never failed to answer, and he generally answered without hesitation. The next lot of answers, *B*, are those given by my brother, T. T. Dixon. After his success with the moving card I expected he would answer well, but though he has a slight preponderance of right answers, especially judging from far to near, he was very uncertain even with considerable differences, and admitted that many of his answers were little more than guesses. He says at first he answered because the card *looked* nearer or farther, but that his later answers may all be reckoned as "inferences"—not because the cards looked different from what they did at first, but because, as he knows it is changes of accommodation he has to look out for, he bases his answers on the greater or less blurring of the outline of the new card when it first appears. In his case however when the new card appeared much blurred he judged "nearer," which is just the opposite of what Mr Hammick did. However from the very beginning he got an excess (though a small one) of right answers (17 right, 6 wrong, and 7 "no answers" in the first 30 trials). My own observations are recorded in the table *C*. It will be seen that I am distinctly more successful than my brother, and that so far from judging better from far to near I get a larger proportion of right answers from near to far ($2\frac{1}{2}$ to 1 instead of 2 to 1). Possibly owing to the fact that I had thought the question out a good deal before trying any experiments, I never had any impression of "seeing" the distance of the card. But at first I judged by what seemed to me like a feeling of strain in the eye, as if from the effort to contract the lens when the second card was the nearer. But it is more probable that this feeling was imaginary, or due to self-suggestion; and at any rate all I can determine certainly by introspection is that on the occasions when I judge "nearer" it takes a longer time for my accommodation to adjust itself. It might be expected from this that when the differences were too small to be clearly discerned I would generally answer "farther"; and the figures in the table confirm this, as far as they go. If we take the answers of ·4 diopter difference and under, it appears that there were 12 near to far and 11 far to near to which I gave replies, and of these replies 15 were "farther"

and only 8 "nearer." I may briefly sum up the results, so far, as follows—

(1) Each of the three observers was able in some degree to judge distances monocularly, but the power of doing so varied greatly in the three cases.

(2) It seems clear that the judgment was directly or indirectly based on the different accommodation required for different distances.

(3) If we can trust the results of introspection it would seem that the actual criterion was in all three cases a difference in the rapidity or ease with which the accommodation adjusted itself (or was adjusted by the observer), and not in any conscious direction of the accommodation by the observer. (If this had been the case it would have been an additional reason for expecting that my brother would answer successfully—at least if his explanation of his success with the moving card is the true one.)

(4) Although the way of interpreting the criterion was different in one case from the other two, all three observers commenced by interpreting it the right way. From this we may infer that the changes which form the criterion in question are noticed, at least sub-consciously, in ordinary life, and associated with the impression of depth, even if they take no part in producing it.

(5) Wundt's observation that changes from far to near are more easily observed than changes from near to far is not confirmed in every case (Dr Hillebrand also found exceptions).

Besides the results *A*, *B* and *C* I made a number of experiments on various observers, which, as far as they went, confirmed the above conclusions, but no one set was sufficiently numerous to be worth tabulating by itself, and no useful result would be attained by mixing them together. But I also made experiments on several observers whose sight was more or less defective. Dr Hillebrand found that his most successful observer was a gentleman (an oculist) who had a cataract in one eye, so that in ordinary life he had to rely on monocular vision alone. I have tried to repeat this experiment, but so far without much success—chiefly because I have not come across a one-eyed observer whose one eye was a good one, as seems to have been the case with Dr Hillebrand's oculist. The observer *D* had a slight congenital cataract in the right eye, so that he could only see clearly, as he would have to do to judge distances at all, with his left. However he was also slightly presbyopic, which, as we shall see presently, would quite explain such success as he attained, the experiments having been made without glasses. The observer *E* had a cataract of some years'

standing in one eye, but it was due to an accident, and not congenital. The vision of the other eye is normal, but apparently not very acute. On one day in particular, after a bad night due to a disordered liver, he said he could not see the cards clearly. His table would have looked better if I had excluded this day's results, but in any case his results are not appreciably better than mine. Table *F* shows a few experiments made one day with an observer who habitually only uses one eye, not however because there is anything radically wrong with the other, but because the other being very astigmatic, and he not having had glasses to correct the astigmatism, the eye has simply fallen into disuse. This at least is how his oculist explained the matter to him. The table shows the curious result that his answers were mostly wrong. In fact it seems clear that he had the criterion by which to make a correct judgment, but that he misinterpreted it. At first sight this would seem to militate against my conclusion (4); but as the sight, even of the eye he habitually used, was not good, I think it more probable that he did not note differences of accommodation at all in ordinary life. This idea was confirmed by the way he answered. At first he said he had no idea which card was the nearer, but when pressed to make some kind of answer, he went right ahead, giving an answer every time with very little hesitation, as if he had arbitrarily fixed on a rule for answering, and just applied it. I could not however make out what his rule was by questioning him.

Tables *G* and *H* refer to Dr W. H. Rivers of St John's College, who is himself a psychologist. His eye is both myopic and astigmatic (3 diopters vertically and 4 horizontally) and moreover his range of accommodation is restricted. This being the case it follows that without glasses he would only be able to see the card (a vertical line) clearly at a quarter of a metre (25 c.m.) distance, which is nearer than the machine allows the card to be placed. Consequently the card always appears blurred, but more or less so according to the distance. This gives him a means of judging distances which a normal eyed person does not possess, and accordingly we find that, without glasses (Table *G*), he gets a very large proportion of right answers, a larger proportion even than is found in Table *A*, though there are also many more cases in which he did not venture on an answer at all. He from the first inferred these answers consciously from the greater or less blurring of the edge of the card, saying he had no accompanying impression of "seeing" the depth. When however he tried to judge with his glasses on, not having thought the matter out, he

was at first completely puzzled, and could hardly venture even a guess. But he and I talked the matter over one day, and it occurred to us that presbyopia ought to confer exactly the same power of judgment as myopia, except that in this case it would be the nearer cards which would appear more blurred. This is undoubtedly what happened in the case of the observer *D*, for he told me that the nearer card always appeared more blurred, and that without his glasses he could not see it clearly at all. Dr Rivers therefore tried again with his glasses on, judging merely by whether the edge looked more or less blurred and answering "farther" in the former case, just as he did without glasses. The result appears in Table *H*,—his answers were nearly all wrong. If his sight had had no other defect than myopia, and his glasses had been correctly adjusted (*i.e.* so that with relaxed accommodation his eyes focussed parallel rays) this would not have been the case—he would then have been able to see either card clearly, and would have had to judge like a person with normal sight. The experiment therefore shows that in addition to myopia his range of accommodation was restricted. We tested this further by paralysing our accommodation with atropine, and then trying to judge as before. My brother and I both noticed at once that we could judge even better than with normal eyes, but that we were judging by quite a different criterion. The difference was so marked that it is unnecessary for a moment to entertain the supposition that we normally judged by the blurring which would result from any failure to accommodate correctly. The results of a few trials on my brother are shown in column *a* of Table II., those of a few on me in column *b*. Columns *c*—*g* refer to observations on Dr Rivers with his eyes under atropine. Having myopia of four diopters for a vertical object, his point of clear vision, without glasses, was 25 c.m. Accordingly, just as with normal eyes, the farther the card was, the more blurred did it look; and, as before, he got a large percentage of "right" answers (column *c*), the only errors being with a difference of about a tenth of a diopter, and the doubtful ones were all under two-tenths. With glasses giving his ordinary correction his point of clear vision would be at an infinite distance; and his accommodation being fixed, the nearer cards would appear more blurred. Accordingly we find that, answering as before, he got only one "right" (·15 diopter difference) and two "no answers" (under 2 diopters difference) out of twenty (column *d*). We also tried with glasses (− 1) spherical and (− 1) diopter cylindrical (axis vertical). This should have reduced his clear point to 50 c.m., though it appears from the answers to have been about 40 c.m. The

last three columns of Table II. show the results; column *e* the answers between 30 and 35 c.m. at distances which were within the clear point. Column *f* answers at distances, one of which in each case was 40 and the other between 40 and 60 c.m., while column *g* shows answers at distances one at least of which was over 60 and neither under 40. As we anticipated, the answers at short distances were nearly all "wrongs," those at longer distances nearly all "rights." The difference between columns *f* and *g* is not very apparent in the table, but the former answers were all given with much hesitation, while in the latter the differences of blurring were declared to be very marked, except where the difference between the distances was very small. The two errors and the one "no answer" were given at 80 to 82 or *vice versa*, a difference of less than a twentieth of a diopter, though four times he answered rightly even at these distances. The remaining "no answer" was 80—85 (under a tenth of a diopter). To further test the power of judging by different amounts of blurring I put the moveable card into the machine, as in Dr Hillebrand's first series of experiments, and exhibited it to Dr Rivers at various distances, he having glasses giving his normal correction. He recognised the greater blurring at shorter distances and *vice versa* correctly (unless the difference was very small) even though the interval between two observations of the card was necessarily much greater than in the two card form of experiment. I think therefore we may add one more to my list of inferences from the experiments.

(6) An absence, or defect, of accommodating power may enable a person to judge distance monocularly, but this is *not* the way people with normal eyes judge.

But though these experiments seem to me sufficient to show that there is a distinction observable between a change of accommodation from far to near and one from near to far, which is quite independent of convergence, and which enables judgments to be formed, even if only by conscious inference; this does not prove that we are incapable of feeling changes in the convergence of our eyes, nor that our impressions of depth are uninfluenced by such feelings. It is an obvious, and I think quite sufficient, explanation of the failure of most observers to judge in the first set of experiments, to say the change of accommodation or convergence was not noticed merely because it was too gradual; just as a father will not notice the growth of his own children, but be surprised at the growth of other people's. But in any case the negative results of the first set of experiments would not tell against feelings of convergence unless we could be sure that the

"*bekannte physiologische Association zwischen Accommodation und Konvergenz*" not only holds as a general rule, but is operative under the special conditions of the experiment. Now under ordinary conditions it is well known, and it is acknowledged by Dr Hillebrand, that the association is only a loose one. Wundt drew attention to this fact, referring to observations of Volkmann, Donders and Czermack; and all Dr Hillebrand had to reply was that their experiments were inconclusive, and were conducted under artificial conditions. He could hardly have contended that the conditions of his experiments were other than artificial; but as the question is interesting in itself I thought it worth while myself to make some further experiments upon it.

I constructed a piece of apparatus which (in spite of the protests of my classical friends) I call the "Accommodometer." It consists of a longi-

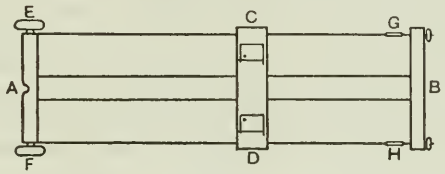



Fig. 2.

tudinal slide (*AB* Fig. 2), about a metre in length, with a notch at one end in which the observer can rest the bridge of his nose, and which is supported on pillars at a suitable height. The longitudinal slide carries a cross-slide, on which move two wooden blocks (*C*, *D*) carrying vertical pins, which are the objects to be observed. By means of an endless cord passing over two hand-wheels (*E*, *F*) at the eye end of the instrument, the observer can move the pins towards or away from each other on the cross slide, or he can move the cross slide bodily towards or away from himself, without having to move his head. The longitudinal slide is graduated in centimetres, to read the distance of the pins from his eyes, and the cross slide in millimetres to read the distance between the pins, both graduations being arranged so that the observer can read them without moving. The course of the endless cord is from an attachment under the block *C*, round a pulley under the end *C* of the cross slide, round the hand wheel *E*, to a pulley *G* at the far end of the instrument (which is attached to a screw by which the cord can be tightened), back to the pulley under *C*, to an attachment under the block *D*, round a pulley under the end *D*, to a second tightening pulley *H*, to the hand-wheel *F*, back to the pulley under *D*, and to the attachment to the block *C* again. The effect of this arrangement is that if both hand-wheels are turned at the same rate in the same direction the cross slide travels in or out, but the pins remain stationary upon it. If however they are turned at the same rate in opposite directions, the pins move to or from each other while the cross slide remains fixed. By a combination of the two motions any desired movement may be given to the pins, with the exception that (if there is no slipping of the cord) the two pins always remain at equal distances on either side of the axis of the instrument.

Now suppose the observer to look at a point in the axis of the instrument, but nearer or farther than the cross slide. He will in general see four pins, but by altering his convergence, or by moving the pins, he can make two of the four images coalesce into a "middle pin," which is seen by both eyes. If now this "middle pin" is seen sharply defined, his accommodation is adjusted for the actual distance of the pins, but his convergence is adjusted for the point of intersection of his optic axes; which, if his interocular distance is known, can be readily calculated from the readings of the scales. To test the association between convergence and accommodation I put the cross slide successively at 20, 30,...up to 100 c.m. distance, and having got a "middle pin" either by convergence (squinting) or divergence (stereoscopically) I see how far I can separate the pins while the "middle pin" remains sharply defined. If there were no association between convergence and accommodation I should be able to see the middle pin sharply defined as long as I could unite the images at all. If on the other hand the association were absolute, the pin would always look more or less blurred. As a matter of fact I find that at medium distances I can keep the middle pin clearly defined up to a certain point, as I separate the pins, but after that, though I can unite the images, the middle pin is blurred, evidently from a failure of accommodation; as if the accommodation were tied to the convergence by a slack rope, which was hauled taut when the pins had been separated a certain distance. To give some notion of the slackness of the rope in my case I have given the average of the results of the last 10 measurements I made at various distances in Table III. If we call the interocular distance of the observer $a$, the distance between the pins $b$, their distance from his eyes $d$, we may measure the difference between the actual angle of convergence (or divergence) and that normally associated with the distance for which the eyes are accommodated by $\frac{b}{a}$, or $\Delta\theta$ say. The absolute angle of convergence $\theta$, measured in the same approximate way, would be $= \frac{a \pm b}{d}$, the lower sign applying to stereoscopic combination, the upper to squinting. When combining stereoscopically if $b$ is greater than $a$, $\theta$ is negative, *i.e.* we get absolute divergence of the eyes. I get this result at long ranges (it is indicated in the tables by a line over the figure, thus $\bar{\cdot}001$) but my friend Mr Hammick got it at all ranges. As the results in the table are averages of ten trials they do not show the greatest angle of divergence

I got, which was $\cdot\overline{026}$ or about $1\frac{1}{2}$ degrees. Mr Hammick never attained to this amount of divergence, though doubtless that was only due to want of practice. These experiments by divergence at long distances do not however throw any light on the connection between accommodation and convergence, as I found that at distances of 70 c.m. and over, whenever I could unite the pins by divergence at all I could see the middle pin clearly. For shorter ranges in the divergence column, and for all ranges in the convergence column, the figures given in the table refer to the greatest distance between the pins for which the "middle pin" remained *sharply defined*. The figures for convergence at 70 and 80 c.m. are really too small, as on some days I was able to converge beyond the limit of the cross slide (300 m.m.). At 90 and 100 c.m. I could nearly always do so, and sometimes considerably over, so I have merely entered (in brackets) the numbers corresponding to 300 m.m. for comparison. It appears from the table that the variation in the angle of convergence which I can make without altering my accommodation, on either side of the normal, decreases steadily with the distance. In the columns headed *DD*, which give the difference of diopters corresponding to the distances for which the convergence and accommodation are adjusted, $\left(\frac{b}{ad}\right)$, the same decrease is visible, though it is not so marked. And though the results obtained on different days differed a good deal in their absolute magnitudes the same decrease was always visible. The table shows that even at 100 c.m. distance I could make over six diopters difference in my convergence without affecting my accommodation; and though in Dr Hillebrand's experiments the observers had no motive for consciously influencing their convergence, it is clear that, if I may be taken as a fair sample, the *bekannte Association* affords hardly even a *prima facie* reason for supposing that the convergence followed the accommodation in those experiments. Of course it is true that the results in the table were not attained without effort and practice. Even after I had got over the preliminary difficulty of keeping the images combined into a "middle pin" I did not at first get such large figures as those given. But if the convergence strayed from the accommodation in Dr Hillebrand's experiments by even as much as one diopter it could not afford the means of judging successfully, and it would therefore be natural to suppose that any information which might be given by a sense of convergence would be neglected.

I have not been able as yet to make any such systematic

experiments with any other observers, but the few trials I have made are enough to show that there are considerable variations in the strength of the association. The great difficulty in getting observations made is that few people are able without practice to combine the images sufficiently steadily to make measurements, or even to say definitely whether the "middle pin" is sharply defined or not. Mr Hammick could only succeed by divergence, but he declared that he always saw the middle pin sharply defined, even with a difference of diopters of 4·2 (at 25 c.m.). By convergence however he was unable to keep the images combined, even when he succeeded in combining them at all. Dr Venn kindly made some experiments one day, and he easily kept the images combined, and perfectly defined even with considerable differences between his accommodation and convergence. But as he is presbyopic, and used glasses, the observations were not useful for the purpose of comparison with Dr Hillebrand's experiments.

But the really important point to settle, if it can be settled, is whether the convergence actually follows the accommodation when judging distances monocularly,—for if it does not, it might be that wrong answers were given in just those cases where the convergence went wrong, and in this case we should have a powerful argument *in favour* of sensations of convergence. I tried to test this by direct observation. I fitted a pair of parallel mirrors, inclined at 45° to the vertical, the one close beside the eye-piece of Dr Hillebrand's apparatus in front of the observer's second eye (which he was requested to keep open), and the other above it, so as to reflect the light from the eye over the top of the instrument, parallel to its axis. The experimenter, or another observer, was thus enabled to look directly into the un-used eye, and he was in a position to detect very small movements in it. I made on the whole over three hundred observations in this way (see Table IV.). I have only recorded observations I made myself, as there were only a few others to record, and the personal equation would prevent their being comparable with mine. The cases enumerated in the columns headed "Right (agreed with fact)" are those in which I noted (or thought I noted) a movement of convergence if the second card was the nearer, or *vice versa; i.e.* in which the movement was what would have occurred in binocular vision. These cases are subdivided again according as the observer answered right or wrong or not at all. Observations *F* and *G* are put separately as I have shown reason for believing that they were affected by an error of interpretation. In the totals at the bottom I have first added in these observations as they

stand, and then as they would be if we interchanged right and wrong answers. It will be seen that in the later case the grand total shows the same sort of proportion as the total of the first four sets of observations.

In so far as any value can be attached to these observations, they seem to show that in the great majority of cases the convergence *did* follow the accommodation (agree with fact) whenever it was noticeable. The first four sets of observations further give 76 cases where the answer agreed with the convergence, to 54 where it did not, whereas the proportion of right answers to wrong is 79 to 51. The table therefore as it stands affords no presumption that the movements of convergence had anything to do with the answers. But after making control experiments I have come to the conclusion that very little value can be attached to the observations. I tried observing one eye of a person looking with both eyes at points at different distances from him—but it was impossible to reproduce the exact conditions of the monocular experiments, or even to get conditions equally favourable for observation. Sometimes I seemed able to detect the movements with tolerable certainty, but on others I judged as often wrongly as rightly. The explanation of this probably is that what I noted were the quickest or most sudden movements, and that a slow movement of considerable amplitude might escape me. For on several occasions where my answer proved to be wrong I could swear that the movement I noted actually took place. My brother, whose eye it was that I watched, said he was aware sometimes of oscillations in the movement of his eye before he fixated the second card exactly. It may be that under the conditions of the monocular experiments these oscillations would be less likely to occur, the movement being more automatic. But I am afraid that until some superior method of observation is devised it will be impossible to say with certainty how far the convergence follows the accommodation in these monocular experiments; and it is therefore impossible to reach any conclusion about feelings of convergence through them.

But interesting as these experiments of Dr Hillebrand's are in any case from the point of view of the experimental psychologist, what lent them their peculiar fascination was the far reaching significance he attached to them. He regards them as destructive of any argument in favour of muscle sensations drawn from the supposition that we can judge distance by convergence of our eyes. He says (p. 148 of his paper) "As it appears in contradiction to these suppositions that, for example, a feeling of convergence is entirely non-existent, or at least does not operate as an associating link in judging distances in space

(let alone that it should itself take part in an intuitable spatial determination) the foundation of all these constructions is cut away." I have already pointed out that this conclusion is entirely based on the negative results of his first set of experiments; for the fact that he was able to give another explanation, however plausible, of the successes in his second set, cannot be held to prove that sensations of convergence are 'non-existent.' I should like to criticise these conclusions on more fundamental grounds also, but as this paper is intended rather as a record of observations, than a criticism of opinions, I postpone a general discussion of the results to a more suitable occasion.

TABLE I.

| | Difference of Diopters | | ·05 | ·1 | ·15 | ·2 | ·25 | ·3 | ·4 | ·5 | ·75 | 1 | 1·5 | 2 | 2·5 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | near to far | right | 5 | 4 | 3 | 0 | 5 | 1 | 1 | 6 | 9 | 3 | 1 | 1 | | 39 |
| | | wrong | 1 | 3 | 1 | 2 | 0 | 1 | 2 | 1 | 3 | 0 | 0 | 0 | | 14 |
| | | no answer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| | far to near | right | 3 | 4 | 2 | 2 | 3 | 1 | 3 | 2 | 8 | 0 | 2 | 0 | | 30 |
| | | wrong | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 2 |
| | | no answer | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 1 |
| | | Total | 11 | 11 | 6 | 5 | 8 | 3 | 6 | 9 | 20 | 3 | 3 | 1 | | 86 |
| B | near to far | right | | | | 0 | 0 | 0 | 5 | 2 | 5 | 7 | 7 | 8 | | 34 |
| | | wrong | | | | 0 | 2 | 0 | 3 | 5 | 7 | 5 | 5 | 3 | | 30 |
| | | no answer | | | | 0 | 1 | 0 | 3 | 0 | 4 | 3 | 2 | 0 | | 13 |
| | far to near | right | | | | 3 | 0 | 1 | 1 | 6 | 10 | 9 | 9 | 4 | | 43 |
| | | wrong | | | | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 5 | 3 | | 13 |
| | | no answer | | | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | | 3 |
| | | Total | | | | 3 | 3 | 1 | 13 | 15 | 29 | 25 | 29 | 18 | | 136 |
| C | near to far | right | | | 0 | 0 | 2 | 2 | 4 | 4 | 15 | 15 | 20 | 2 | 1 | 65 |
| | | wrong | | | 0 | 1 | 1 | 1 | 1 | 2 | 5 | 4 | 7 | 2 | 1 | 26 |
| | | no answer | | | 0 | 0 | 1 | 0 | 1 | 2 | 5 | 3 | 0 | 0 | 0 | 12 |
| | far to near | right | | | 0 | 0 | 1 | 1 | 2 | 5 | 15 | 19 | 20 | 6 | 3 | 72 |
| | | wrong | | | 1 | 1 | 1 | 2 | 2 | 3 | 13 | 9 | 4 | 0 | 0 | 36 |
| | | no answer | | | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 4 |
| | | Total | | | 1 | 2 | 6 | 7 | 10 | 16 | 55 | 52 | 51 | 10 | 5 | 215 |
| D | near to far | right | | | | 6 | 1 | | 1 | 4 | 3 | | | 1 | 1 | 17 |
| | | wrong | | | | 2 | 1 | | 0 | 1 | 1 | | | 0 | 0 | 5 |
| | | no answer | | | | 0 | 0 | | 0 | 1 | 0 | | | 0 | 0 | 1 |
| | far to near | right | | | | 5 | 1 | | 0 | 5 | 1 | | | 1 | 0 | 13 |
| | | wrong | | | | 3 | 1 | | 0 | 0 | 1 | | | 0 | 0 | 5 |
| | | no answer | | | | 0 | 1 | | 0 | 0 | 0 | | | 0 | 0 | 1 |
| | | Total | | | | 16 | 5 | | 1 | 11 | 6 | | | 2 | 1 | 42 |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | near to far | right | | | | | | | 5 | | 3 | 10 | | 9 | 5 | 32 |
| | | wrong | | | | | | | 5 | | 1 | 7 | | 4 | 1 | 18 |
| | | no answer | | | | | | | 1 | | 0 | 0 | | 1 | 0 | 2 |
| | far to near | right | | | | | | | 4 | | 2 | 8 | | 6 | 3 | 23 |
| | | wrong | | | | | | | 3 | | 4 | 8 | | 2 | 1 | 18 |
| | | no answer | | | | | | | 2 | | 0 | 2 | | 1 | 0 | 5 |
| | | Total | | | | | | | 20 | | 10 | 35 | | 23 | 10 | 98 |
| F | near to far | right | | | | | | | | 0 | 0 | 5 | 1 | | 0 | 6 |
| | | wrong | | | | | | | | 0 | 2 | 7 | 0 | | 9 | 18 |
| | | no answer | | | | | | | | 0 | 0 | 0 | 0 | | 0 | 0 |
| | far to near | right | | | | | | | | 1 | 1 | 0 | 0 | | 3 | 5 |
| | | wrong | | | | | | | | 1 | 1 | 1 | 2 | | 6 | 11 |
| | | no answer | | | | | | | | 0 | 0 | 0 | 0 | | 0 | 0 |
| | | Total | | | | | | | | 2 | 4 | 13 | 3 | | 18 | 40 |
| G | near to far | right | | 3 | | 2 | 0 | 1 | 6 | 5 | 11 | 1 | 9 | 0 | | 38 |
| | | wrong | | 0 | | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 2 | 1 | | 9 |
| | | no answer | | 0 | | 1 | 1 | 0 | 2 | 1 | 3 | 1 | 3 | 0 | | 12 |
| | far to near | right | | 1 | | 3 | 0 | 1 | 6 | 3 | 15 | 2 | 8 | 2 | | 41 |
| | | wrong | | 1 | | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 1 | 1 | | 8 |
| | | no answer | | 0 | | 0 | 1 | 1 | 5 | 1 | 3 | 1 | 1 | 0 | | 13 |
| | | Total | | 5 | | 6 | 3 | 4 | 23 | 11 | 36 | 5 | 24 | 4 | | 121 |
| H | near to far | right | | | | | | | 0 | | 0 | | | | | 0 |
| | | wrong | | | | | | | 5 | | 13 | | | | | 18 |
| | | no answer | | | | | | | 0 | | 2 | | | | | 2 |
| | far to near | right | | | | | | | 1 | | 2 | | | | | 3 |
| | | wrong | | | | | | | 4 | | 6 | | | | | 10 |
| | | no answer | | | | | | | 0 | | 4 | | | | | 4 |
| | | Total | | | | | | | 10 | | 27 | | | | | 37 |

## TABLE II.

*(Eyes under Atropine.)*

| | | *a* | *b* | *c* | *d* | *e* | *f* | *g* |
|---|---|---|---|---|---|---|---|---|
| near to far | right | 6 | 11 | 9 | 1 | 0 | 5 | 10 |
| | wrong | 2 | 1 | 1 | 9 | 5 | 1 | 1 |
| | no answer | 3 | 2 | 2 | 2 | 2 | 2 | 1 |
| far to near | right | 6 | 8 | 5 | 0 | 1 | 4 | 11 |
| | wrong | 1 | 1 | 1 | 8 | 7 | 0 | 1 |
| | no answer | 2 | 7 | 2 | 0 | 1 | 1 | 1 |
| | Total | 20 | 30 | 20 | 20 | 16 | 13 | 25 |

## Table III.

| Distance from eye (c. m.) | by Convergence | | | by Divergence | | | |
|---|---|---|---|---|---|---|---|
| | *b* | $\Delta\theta$ | *DD* | *b* | $\Delta\theta$ | $\theta$ | *DD* |
| 20 | 115 | ·58 | 9·7 | 31 | ·15 | ·15 | 2·6 |
| 30 | 139 | ·44 | 7·4 | 45 | ·15 | ·05 | 2·5 |
| 40 | 158 | ·39 | 6·6 | 52 | ·13 | ·02 | 2·2 |
| 50 | 184 | ·37 | 6·1 | 57 | ·12 | ·005 | 1·9 |
| 60 | 213 | ·36 | 5·9 | 61 | ·10 | $\cdot\overline{001}$ | 1·7 |
| 70 | 243 (?) | ·35 | 5·8 | 64 | ·09 | $\cdot\overline{006}$ | 1·5 |
| 80 | 273 (?) | ·34 | 5·6 | 68 | ·08 | $\cdot\overline{010}$ | 1·4 |
| 90 | [300 | ·33 | 5·6] | 71 | ·08 | $\cdot\overline{012}$ | 1·3 |
| 100 | [300 | ·30 | 5·0] | 74 | ·07 | $\cdot\overline{013}$ | 1·2 |

## Table IV.

| Convergence ... ... | Right (agreed with fact) | | | | Wrong (disagreed with fact) | | | | None observed | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Answers ... ... ... | right | wrong | none | Total | right | wrong | none | Total | right | wrong | none | Total | |
| B ... ... ... ... | 14 | 10 | 0 | 24 | 8 | 6 | 0 | 14 | 28 | 20 | 4 | 52 | 90 |
| D ... ... ... ... | 12 | 6 | 1 | 19 | 1 | 1 | 1 | 3 | 8 | 2 | 0 | 10 | 32 |
| E ... ... ... ... | 32 | 25 | 3 | 60 | 2 | 2 | 1 | 5 | 14 | 6 | 2 | 22 | 87 |
| G ... ... ... ... | 8 | 0 | 2 | 10 | 2 | 1 | 0 | 3 | 30 | 5 | 5 | 40 | 53 |
| Total | 66 | 41 | 6 | 113 | 13 | 10 | 2 | 25 | 80 | 33 | 11 | 124 | 262 |
| F ... ... ... ... | 5 | 18 | 0 | 23 | 3 | 0 | 0 | 3 | 2 | 5 | 0 | 7 | 33 |
| H ... ... ... ... | 1 | 3 | 1 | 5 | 0 | 10 | 2 | 12 | 1 | 16 | 3 | 20 | 37 |
| Total | 6 | 21 | 1 | 28 | 3 | 10 | 2 | 15 | 3 | 21 | 3 | 27 | 70 |
| Grand total | 72 | 62 | 7 | 141 | 16 | 20 | 4 | 40 | 83 | 54 | 14 | 151 | 332 |
| The same, interchanging right and wrong answers in lines *F* and *H*. | 87 | 47 | 7 | 141 | 23 | 13 | 4 | 40 | 101 | 36 | 14 | 151 | 332 |

## VI.—REALITY AND CAUSATION.

W. Carlile.

### PART II.

§ 7. *Causation. The state of the controversy.* I propose presently to try if, by the method made use of in regard to Reality and Identity, it is possible to throw any light on the great problem of Metaphysics, the problem of Causation. We may glance first, however, at the present state of the controversy. It is worthy of remark that, while modern science completely ignores the scepticism of Hume in regard to the existence of the external world, as a matter with which it has no concern, in England, at any rate, its most eminent representatives have adopted, and have, not without considerable enthusiasm, promulgated his doctrine of causation. That the idea of cause and effect contains nothing more than invariable succession, and that "nothing has anything in it that connects it with anything else" were conclusions which Hume put forth, in his day, as "something extraordinary" but which "seemed to be founded on sufficient evidence." To-day they are enounced by such men of science as Professor Huxley as if they were on a par in certainty with Newton's 1st law of motion; as if to doubt or to deny them were merely to proclaim one's own philosophical and scientific incompetence. Yet nothing is more certain than that the denial of causation was based on the denial of the reality of the outward world, and that it has no sort of *locus standi* apart from it. If the world is not for us a mere current of ideas, then we let in again the notions of "action," "quality," "power" and "efficacy"; notions the very existence of which, as notions, was denied by Hume and Mill, but which, if readmitted, bring with them

causation in a very different sense from that of mere antecedence and consequence[1].

When brought to the test of individual instances, their doctrine will not, I think, be found to present a degree of self-consistency adequate to warrant the dogmatic manner in which it is laid down. Mr Mill, the most careful and accurate writer of this school, defines a cause as "a physical fact on which some other physical fact is invariably consequent"; and as he thinks that "everything that begins has a cause," we may put it that he lays it down that every physical fact has some other physical fact on which it is invariably consequent. But has it?[2] The formula might possibly square with the rotation of the earth, or the recurrence of the tides, or even with the appearance of the rainbow, but never with the wanton and endless variety of animated nature. The individual facts of life and history happen once and never recur. How then can they be invariably consequent on anything? Moreover, if it was from this invariability alone that we acquired the notion of causation, I cannot see how we could acquire it till the end of life[3]. When you find a child in tears and ask him why he is crying, and he answers, "because he hit me," can anyone imagine that what is running in his mind is anything about she invariability of consequence between blows and tears, an invariability which does not even exist? Is it not plain that he could affirm causation of the blow the first time he was hit as well as the last?

Another definition of causation given by the same writer is that the scientific cause is the total of conditions without which any event would not happen. We have thus the full cause of daylight, he says, when we have "the sun risen above the horizon, his light not extinct, and no opaque object between us and him." True, we have; but we have also an absolutely complete description of the effect, of daylight itself. That can hardly be an adequate definition of the cause which fails to

[1] Hume's contention that cause and effect were nothing but invariable succession was based on his theory that "all ideas are separable in thought." This applies, of course, to such "ideas" only as are mental images. The idea of poison, which imports "If you eat it, it will kill you," is inseparable in thought from mankind, from the animal world, from life and death and indeed from the universe.

[2] That we think we see what Mr Mill means by his formula is not, of course, a sufficient justification of the formula, if it does not, as it stands, square with what it purports to describe.

[3] I cannot help thinking that, unconsciously, another uniformity is running in the minds of those who propound the doctrine; the uniformity, *viz.* that gives a sound its objectivity, the uniformity of its effect on us and all around us.

distinguish it from the effect. Again, Mr Mill says that the term cause may be properly applied to any one of these conditions, and that it is a mere "caprice of language" to which. Caprice, however, is no more the rule in regard to the natural use of words than it is in regard to any other natural phenomenon. If we could properly call any of the conditions at random the cause, no matter how completely irrelevant they were, then we might, in some conceivable circumstances, rightly assign the Attraction of Gravitation as the cause of the success of Offenbach's operas, because without the Attraction of Gravitation neither he nor his operas nor his audience would ever have been there; then too, the very thing that we emphatically state not to be the cause, might be rightly said to be so. We can say, for example, that "Mrs Brown was the best dressed woman in the room," though the material of which her dress was made, being inexpensive, was not the cause of her being so; but, plainly, the material was one of the conditions of her being dressed at all, let alone well dressed.

§ 8. *The inverse relation between knowledge and reality.* Our knowledge of any subject begins with individuals and goes on from them to wider and wider generalities. These widest generalities have, however, the simplest content. Hence, it has come about that, in all departments of thought, mankind have, in all ages, shewn a disposition to place them first instead of last as the subjects of investigation. Hence Hume and his followers, in commencing their enquiry as to the nature of causation, have made the mistake of looking first to those applications of the word which have the widest range but the minimum of connotation. They have thought that they could satisfy themselves that there were cases in which the word cause could mean nothing more than antecedence and consequence, and have proceeded to conclude that it could never mean anything more in any sense. We have seen, on the contrary, in regard to Reality, that that word meant very much more in the type instance than it did in some of its derivative applications, and so I think we shall see in regard to causation. Of all the *idola tribus*, this tendency to begin at the wrong end, to put the abstract before the concrete, is the most pervasive in its influence, and the most difficult altogether to escape. Knowledge in this respect we forget is not built on the pattern of existence. The process in existence is from the simple to the complex, from the egg to the bird, from the seed to the tree. In knowledge, on the contrary, it is from the individual with its full content, which it would exhaust the resources of all the sciences to describe, to the bare notion of existence itself. Aristotle laid his finger

on the source of the illusion when he spoke of our tendency to put the whole before the parts where we ought to put the parts before the whole.

For many generations in natural science men were arguing from the general to the particular and getting no farther ahead by it, till Bacon put them on the right track. Indeed, every important rectification of philosophical error seems to have taken the shape of shewing that it is the individual fact which should take precedence of the general truth as a subject of enquiry. The fallacious tendency dies hard. When, a few years ago, a series of Science Primers was issued by the leaders of the English Scientific World for the use of children between twelve and fifteen years of age, they commenced with a treatise on questions of a metaphysical nature, on the yet unravelled and unexplained distinction between Law and Cause. We have a conspicuous example of its influence in the practice still prevalent in most of our schools of commencing the teaching of languages by teaching their grammar; much of what they teach under the name of syntax being really metaphysics, and erroneous metaphysics at that. We have another, perhaps, in the success of a system of philosophy which takes the Aristotelian categories[1], the highest classes into which existence can be divided, and gives them a mental position antecedent to sensation itself. In other departments of thought it has manifested itself in the famous fiction of the social contract between king and people at the dawn of history, in the conception of the criminal law as something handed down from ancient lawgivers, and in the common failure to recognize that a law which is anything more than the registration of an already formed public sentiment is inevitably valueless.

§ 9. *The type instance of Causation.* What I have said in the last section seems to justify the method of commencing an enquiry into the meaning of such words as Reality and Causation by an investigation of the meaning of type instances. Let us then look for a type instance of Causation.

Ask anybody but a metaphysician, "What would you mean by causing anything?"; he would probably say, "Doing something," and if he could not explain what doing something is, he could take any object lying on one end of the table and move it to the other end and say, "That is doing something." What happens then in such a case as this? (1) There is motion on the part of two objects in contact, the mover and the thing

[1] Modified, of course. The mistake is common, though less obviously, to all the systems which take the hypostasised sensation and place it as antecedent to the outward object.

moved, say my hand and the ink bottle, ending, as soon as the motion of the former ceases, in change of place of the latter; the joint motion of the two presenting to sense, for a short time, one phenomenon. The cause, in such a case, completely fits the effect. (2) The motion begins on the part of the cause, before the motion on the part of the thing moved, or if not before, at any rate simultaneously with it. If its motion did not begin till after, we would not call it the cause. (3) The cause must not be manifestly moved by something else. For example, if I should put three books in a row and push them along, the causing of the motion in the book furthest from me would not be referred to the intermediate books but to me[1]. I am looked on as originating the motion. I see no escape from this conclusion, yet it plainly will not square with the current opinion that there is something which makes us think that every cause must itself have a cause. The truth is the very opposite. My action would not be called the cause, if it were not believed to be uncaused[2]. That it is caused by the combustion of the food we eat, and so on, is something that we do not find out till long afterwards, and nine-tenths of the world do not find out at all. "Self caused," some one may suggest, but a second self which causes the actions of the first is plainly a fancy of sophisticated metaphysicians, not a thought of the natural man. If I see that the cat is not where she was when last I looked at her, I never think of enquiring what is the cause of her change of place. The notion of cause does not emerge in such a case at all. If, on the contrary, I see that my slippers are not where I left them, I know there is a cause for that. Something living, it may be a child, or it may be a puppy, has moved them. The type notion of cause then primarily imports reference to some living thing. The type instance it is that gives us our ideal of causation.

In the change of place of the ink bottle caused by my hand I have said that the cause perfectly fitted the effect. What I mean will be clearer if we take the case of a piece of putty and the displacement of part of its substance by the pressure of my finger. Here, as in the former case, the cause fits the effect, at the time, but here also it leaves a track behind it. The effect is here of such a sort that the cause can be afterwards seen to

[1] It may be said the intermediate books would be looked on as intermediate links in the chain of causation, but I think not. We think of the engine as the cause of motion in the train, but not of the second carriage as the cause of motion in the third.

[2] Motive, I think it will be clear later on, is only a cause in a derivative sense, which is not reached when the type meaning is constituted. In the type instance everything is patent to sense.

have fitted it, or, in other words, to have been perfectly adequate to the production of it.

§ 10. *Hypothetical causes*[1]. Let us now take an example of a different sort. Let me take this stone, hold it over a tumbler of water and let it go. It sinks to the bottom. This sinking is an added phenomenon. I do not find the cause of it in my act, which was quite similar to my former one, which yet was attended with no result similar. I must look out for another cause for this sinking. Why, it may be asked, must I? For this reason simply, that I have imbibed with language the classification of stones among dead things, that is, things that do not move unless something else moves them. The stone has moved, and we have our choice between calling it a living thing[2], and enquiring who or what has moved it. We enquire in vain; nothing is to be found; so we formulate an expression for the fact that it will sink whenever put into water, in the words, perhaps, that "its specific gravity is greater than that of water," and then, for want of any other cause, we call this specific gravity itself the cause. Here, for the first time, the meaning of Cause becomes entangled with the meaning of Law. How wide a difference there is between causes of this sort and causes of the primary sort may be seen from this, that a regress through them does not lead us any further back in time. If Gravitation is rightly called the cause of weight[3], it is not because Gravitation has even an imaginary priority, in point of time, to weight, that it is so called.

We often fail to recognize to how great an extent what we call the world of fact is really a world of hypotheses. Into the meaning of everything, there enters the conception of what it would, in appropriate circumstances, be or do. In regard to Geometry it was long ago pointed out that the science was one of hypotheses only. Then came the problem, to understand how, if so, it came to have any application to the world of fact. When we consider, however, that the very meaning of the distance of anything from me in the world of fact is the length of the straight line that I *would* construct *if* I moved up to it

[1] It will be seen below that hypothetical is not used as opposed to real, but only as opposed to actual.

[2] As conceivably an Early Greek, or one brought up in a pantheistic faith, might.

[3] The use of "Cause" here may be open to question. Professor Huxley thus uses it (*Introductory Primer*, p. 27). Also Professor Balfour Stewart (*Physics Primer*, p. 8). Professor Huxley warmly asserts that Laws are not Causes (*Introductory Primer*, p. 13) while on the previous page he has cited as an example of a cause the relation between the strength of a branch and the force of the wind that breaks it (*Introductory Primer*, p. 12).

in a uniform direction, we can see that the problem is not insoluble. The meaning of equality is not "immediate coincidence," but something very different. It is the fact that the objects of which it is predicated would if superimposed coincide. The difference is the same as that between "perception" and "object," between sensation and quality. In Mr Mill's opinion, there is no difference in the latter case, as, in Hume's, there is none in the former; but there is surely this difference in both, that the quality or the object may be one while the perceptions or sensations that correspond to them may be innumerable. In Mr Mill's view, a quality is nothing at all; it is a mere delusion due to the careless use of language; but it surely has existence of a sort even when not in operation. The specific gravity of the stone even when not sinking in the water, does not stand on the same footing as a purely conventional quality such as the power of the Chess Queen to sweep the board. Language guides us rightly in making us think of qualities as in a sense existing, nor can we get on without attributing causation to them. We must, however, bear in mind that it is not causation in its full and typical sense that we attribute.

As the characters of human beings are the properties of natural objects, inclination, motive and desire, when thought of as causes, are causes in this secondary sense only.

§ 11. *The uniformity of Nature.* We can now perhaps understand better what Mr Mill meant by saying that the scientific cause was the total of conditions without which any event would not happen. The specific gravity of the stone relatively to water, *plus* my act in putting it into the water, are a compendious expression for the total of relevant conditions necessary to the stone sinking. We can thus, in this case, have the total of conditions present with the effect yet uncompleted, and can thus divide cause and effect in thought. It is here first that we come in contact with the conception of the uniformity of nature, and with invariable succession as a characteristic of causation. It is to be observed that we do not reach it at all till we have a world "articulated into things, properties, and events." Invariability of recurrence could have no meaning as applicable to a current of ideas. So that, though Hume's theory of causation was based on his idealism it will not in any way square even with it.

Though causing can often be used as synonymous with doing, there is a distinct shade of difference of meaning between the two. Causing is more often used of what is brought about indirectly than what is done directly. Causation imports the existence of a gap which the cause, when assigned, fills up. The gap, however, may not be in the facts themselves, but only in

our knowledge or that of our interlocutor. I move the ink bottle. That is doing something. You find it moved, and ask what is the "cause" of its change of place. This aspect of cause it is, that makes us use it convertibly with such words as explanation or reason,—that makes us say that we understand anything when we know its cause. In mechanics the changes that take place are changes which we have under our eyes all the time; we can follow and understand them. In chemistry, on the contrary, the curtain falls for an instant on human knowledge, and when it rises a metamorphosis has taken place[1]. Instances cited from chemistry therefore are the favourite examples chosen by those who maintain that there is nothing in causation but antecedence and consequence. Even in regard to cases of this sort, however, that cannot be admitted. How could we use invariable succession to prove causation if causation itself were nothing but invariable succession? We should then be using invariable succession simply to prove invariable succession. What is running in our minds in affirming causation in such cases, I think, is the conviction that if our powers of observation were greater we should be able to fill up the intermediate links and to understand the process of causation in such cases, as we do in mechanics. Towards the filling up of these links it is that science is continually striving. The metamorphosis of a drum-beat into a sound is still inexplicable to us. Some intermediate links, however, have been filled up for us when we learn that the beaten drum communicates vibration to the air which it in turn communicates to the drums of our ears. The process of filling up the intermediate links is, from another point of view, the process of creating generalizations, of reducing the phenomena of sound to a general law. The two things seem very distinct. It is a matter of surprise to us to find that they are one. When we reach the type instance there is nothing left between cause and effect but the most abstract of all conceptions, that of being. The meaning of cause thus becomes still further involved in that of law, and we come to think that we have made a step in the direction of understanding any sequence when we can shew it to be an instance of a more general law. We have a perfectly adequate explanation of any fact, however, only when we can refer it to the act of a living being. When we refer it to a law of nature, even the widest, we have a provisional explanation only; one that we think may serve us till we can get a better; and even if we conclude that we never can

[1] The two sorts of change need some appropriate words to distinguish them. They might be distinguished as patent and shrouded. In some departments of sense there are intermediate degrees, as in the mixture of colours and the transformation of noises into musical sounds.

get a better, this does not prevent us from regarding the explanation that we have got as provisional and inadequate.

§ 12. *Cause and sensation.* The causation that we attribute to the objects of the external world in producing impressions on our senses is of course the secondary sort of causation which we attribute to qualities, powers and properties, not the primary sort which we attribute to the acts of living beings. In the sensations which give us sound and light and so on, there is a metamorphosis, and with it the possibility of illusion. From this is taken the notion that all the information that sense can give is illusory or symbolic. We may ask, "Illusory or symbolic as compared with what?" Because the refraction of rays of light makes us see something in a position in which we know it is not, we say sense may be illusory, as if any sense may be. But how do we know that the thing is not in the position in which the information conveyed through the eye makes it appear to be? Because the information conveyed by the eye differs from that conveyed by muscular activity. It seems then that our opinion as to the untrustworthiness of vision is due to our taking for granted the complete trustworthiness of muscular activity. We use it as our standard of certainty. It is surely then an absurdity to take the notion of illusoriness as compared with this standard and give it a possible application to the standard itself. There is no similarity, though there is a proportion, between vibrations and the sounds they give rise to; but to say that the combined sensations and inferences which build up the conceptions of extension and solidity have no similarity to the qualities of extension and solidity in the outward object, is so far from the truth that it would be truer to say that the two are one thing. Indeed it requires some subtlety, even in thought, to distinguish them. They are, like cause and effect, in our type instance, for a moment one fact, and they fit each other with the same precision. They are related to each other as the specific gravity of the stone is to any individual instance of its sinking in water, as the equality of two objects is to the fact of their coinciding on any occasion on which they are superimposed. If Mr Mill had called his possibilities of sensation cause of sensation there would have been nothing left to argue about. His view would have been indistinguishable from that of "naïve realism." Possibility is an abstraction and so, in Mr Mill's own view laid down elsewhere, not susceptible of a plural; cause, in its secondary sense, is the very word and the only word for expressing that which he endeavoured to express by possibility. The "Thing in itself" is of course a chimera. That which realizes all that there is of the possible in the

conception is nothing more mysterious than the ordinary object of the outward world in the aspect of its primary qualities[1].

§ 13. *Force and causation.* We are accustomed in mechanics to the conception that states of rest are states of equilibrium and that the withdrawal of any force will give some counteracting force fuller play. Putting cause for force we may perhaps greatly extend the application of this conception. Mr Mill cites such a fact as the capability of the absence of a sentinel from his post to be assigned as the cause of the surprise of an army, in support of his view that "the caprice of language" may assign any condition whatever, even a negative one, as a cause. But the absence of the sentinel was no more a negative condition in truth than would have been the undermining of a bridge which lay in the army's route. The presence of the sentinel on guard was one of the causes that preserved for the time being the equilibrium, the *status quo.* His withdrawal let other causes come into play and thus the disaster occurred. My present state of wealth is a state of equilibrium between my efforts to become much wealthier and the competition of those in the same profession or line of business. The price of anything is, of course, the equilibrium between the desires of purchasers and vendors. If two young people are in love, with the attachment as yet undeclared, their state is one of equilibrium between inclination and conventional restraint. The same principle holds good through every department of life and science. As things too are states of matter, it probably extends to all things. Mr Darwin's great generalization has taught us that the existence of every species is the result of contest and survival; so perhaps is everything actual, from the course of a ship to the existence of Alps and Andes, from the formation of a cabinet to the currency of the last slang expression. When we observe too how close an analogy there is between the operations of incipient reason[2] and the operations of natural selection, each being characterized by innumerable blind chance trials ending at last in one thing being hit on that succeeds, it seems possible that the manifestations of reason both in man and nature may be brought under the same law of survival.

§ 14. *Vires acquirit eundo.* There is another aspect in which what we know of causation in mechanics may be susceptible of extension to causation generally. Newton's 1st

[1] Hartmann, it seems, thinks that position and movement "in things are the same as they are in the mind." W. Caldwell, *The Epistemology of Ed. V. Hartmann* (*Mind*, April, 1893, page 192).

[2] Compare Professor Bain on the growth of voluntary power (*The Emotion and the Will*, Ed. 2, page 315).

Law, that what is at rest remains at rest till moved and what is in motion continues in motion at a uniform rate till arrested, is, as regards the phenomena to which it is applicable, the most elementary statement of the principle of the uniformity of nature. The first half appears self-evident, the second a paradox. Mankind only came to discover it by the necessity of finding something to account for the acceleration of velocity under the operation of a constant force. Have we not something analogous to this in psychology, in the fact that a pursuit only congenial at first often becomes at last all absorbing, in the growing inveteracy of habit; in the increase of affection or repulsion under the influence of continual intercourse; in commerce, perhaps, in the exaggerated upward and downward fluctuation of the markets, often likened to the swing of the pendulum; and in history, in such phenomena as the ever accelerating growth of the British, the Roman or the Russian empires? *Cessante causa cessat et effectus* is perhaps no more true of states of mutation generally than it has been found to be of states of motion.

§ 15. *The properties of artificial objects.* It is often said that man can create nothing. If a property, however, is anything, he can create properties. The property is the salient thing indeed about an artificial object; that from which it takes its name; that, it may be said, which constitutes its nature. Man cannot create the materials out of which a watch is made, but he can create its nature, that of being something that tells the time. When we use the word "make" we always mean giving to things a nature that fulfils a purpose. I take this plank and throw it aside; I do nothing except move a plank. I take this other plank and lay it across the drain in front of me to walk over. I may be said then to make a bridge. The only difference between the two acts is in respect of the purpose subserved. It is to be remarked further that the property created may be said to be capable of existing in a fashion apart from the original material of which it was a property, and to be transferable to other material. When Wordsworth wrote the *Excursion*, he imported to certain paper and ink new properties, and these new properties have since been transferred to innumerable other combinations of paper and ink. Surely, in such a case, it will not be denied that Wordsworth was the *producing* cause of the *Excursion*. What could be meant by affirming that there was nothing but the relation of antecedence and consequence between Wordsworth and the *Excursion*, I leave it to someone else to explain.

§ 16. *Conclusion.* We know the superstructure that has been built on the foundation that cause and effect are nothing

but antecedence and consequence. The conclusion is arrived at, perhaps, with the late Professor Clifford, that the Universe, as a whole, is mindless, or, at any rate, that the operation of mind there is altogether beyond the range of human inference. Does this conclusion stand or fall with its premises? That is too large a subject to enter on at present. This much may be said, however, that it is brought into suspicion by the company in which it is found. I think it is clear that the theory that antecedence and consequence are the sole content of the idea of causation fails altogether to square with the facts of life and nature, and does not fail to land those who propound it in self-contradictions; and so, probably, must any theory which leaves out of account the existence somehow and somewhere of purpose, forethought, and intention, in nature.

## VII.—IN WHAT SENSE ARE PSYCHICAL STATES EXTENDED?

By F. H. Bradley.

The question asked above may be met by a general denial. Psychical states, we may be assured, are not extended in any sense or at all. But this denial, if taken absolutely, could not be sustained. It seems open to an objection such as the following: If what is psychical is not extended then nothing is extended, for in the end everything must be psychical. And at least in some quarters it appears doubtful if such an objection could be met. But, to pass by this argument in its more sweeping and more assailable form, I will go on to urge it in a shape which to me seems conclusive. The psychical existence of extension may be wholly denied, yet the idea and the perception of extension must at the same time be affirmed. And any such position, I would submit, is inconsistent with itself. For the perception and idea are admitted themselves to be psychical, and, if this perception and idea in no sense possessed extension, in what possible way (we must urge) could they represent it? And, since to this question I have not yet found a reply, I must conclude that in some sense the psychical can be extended.

But ideas and perceptions, I shall be told, are not what they signify. It is true, I reply, that their meaning and their existence are different. But if this difference is taken to preclude sameness, the statement would become false. For a thing, though the same, becomes different also when diversely applied. And a feature of content, which makes the meaning of an idea, must, I presume, in order to do this, be present psychically. Thus, for example, the idea of my horse in a sense has extension, and this idea also is a psychical state. And when you ask me to believe that a psychical state may have somehow extension, while in no sense whatever it is extended, I cannot follow you. For how far and in what sense that which has extension itself is extended, I propose to discuss. But to deny extension wholly

and altogether I find to be unmeaning. And, if I am asked whether the extension of my horse exists also in my soul, that enquiry in no degree tends to stagger me. These extensions are different and they must be different since, and so far as, they belong to and qualify what is different. But, for all their differences, they are also and as well most assuredly the same extension. And, if they are not to be the same, I in my turn ask how my idea can be a true one. Nay, without extension in some sense, how could a false idea even succeed in looking like truth? For to appear with something or as something which one in no sense has or is, if we admit it to be possible, is at least a thing which calls for some explanation[1]. And in default of this explanation we must assert that psychical states in some sense may be extended[2]. Let us endeavour further to define the sense of that extension.

There is an obvious difference between extension as it is in the soul and extension as it is in the physical world. For the movement and the collision of material things is not present in the soul, or, rather, is not present in its full and complete nature. And we find this at once if we endeavour *a priori* to demonstrate about matter. So far as mere space is concerned we appear to possess its nature inwardly, and hence to be able within ourselves to control and to develop its essence. But clearly no such claim could be upheld with regard to body, and to anticipate or even to demonstrate the various qualities of nature seems quite impracticable. Observation and experiment have taught us connections which internally we can repeat, and which partly we can combine and can rearrange. But we are not able (as with mere space) to experiment internally, for we do not possess the complete nature of the physical process. Thus by sheer hallucination we may even actually perceive a physical world, but no mere hallucination would supply us with fresh physical facts. We should be dealing always with but our old acquired material, and presumably we could not, apart from accident, gain from a sheer hallucination new information about nature.

On the other hand to deny that in the soul we have at all the extension which meets us in nature would be mistaken. We certainly have this same extension and can repeat the process of its happening, but we can do this only within limits, partially, and up to a certain point. For when we perceive a sequence in nature we perceive in this but one feature of a

[1] Compare here *Mind*, N. S. IV. 21.

[2] Whether extension is a primitive or an acquired perception seems a consideration not relevant. For in any case it exists, and that existence is all that need here concern us.

whole. The result observed does not follow really and in fact except from the complete conditions, and to experience these complete conditions is quite impossible. The essential process, so far as known by us, is gathered piecemeal, constructed ideally, and put together in the abstract. And hence our essential process, as such, is not that actual process which produces the perceived result. Or rather it is the actual process but so incomplete as to be actual no longer. In this sense we may deny that the physical extended moves and happens in a soul. For it happens there not integrally but merely in certain fragmentary aspects. And we possess it not bodily but only in schematic outline.

Now to object that in the psychical world also we, sometimes or always, have sequences the full conditions of which we cannot experience would be irrelevant. For in any case in the soul we find no world or order of spatial happening such as we ascribe to nature. And, however many psychical sequences may remain incomprehensible, our conclusion remains. We are right to deny that the physical extended in its full process has psychical existence. Let us pass from this to another doubt which concerns us more.

One may reasonably deny that the physical extended essentially consists in its extendedness. The properties of the physical world follow, one may contend rather, only in part from its mere extension, and from its mere extension, however well you knew that, you could not comprehend the process of nature's happening. But hence the extension of nature and the order of nature, so far as it follows from that extension, can (it may be held) after all be possessed by the soul and in a word be psychical. This is a grave question on which I must again touch lower down, but its full solution cannot be attempted here. And for our present purpose we may be content to leave the question unanswered. We may either say that psychically we cannot possess the complete nature of physical extension; or again we may conclude that, while we possess this, the physical extended has also an additional aspect, an aspect essential and beyond our psychical experience. In this latter case we must allow no essential difference between extension physical and psychical, and we must hold that the process of the physical extended, so far as extended, also happens partially in the soul. But in the former case physical extension itself will not be experienced by the soul except as defective in its essence. Psychical extension in other words will lack an integral feature owned by the extension which is physical. But with such refinements we perhaps need here concern ourselves no further. For it will be true in any case

that up to a certain point we have psychically the same extension which qualifies nature. In any case the two will have some identity, and the doubt attaches merely to the point at which they diverge. Psychical and physical phenomena, in other words, to a certain extent will in any case share the same extension. But in one case the physical world will have that extension less fragmentary and more complete, while in the other case the physical world will, besides its extension, necessarily possess an additional factor not owned completely by the soul[1]. With this we may pass from a distinction which for our present purpose seems barren.

But if psychical states are extended, I may be told, absurd consequences will follow. For these states will then collide, if not with outer things, at least with each other. Nothing of the kind, I reply, need really take place. For even if we can assume of physical extensions that they all are comprised in and form parts of one extended world, such an assumption evidently becomes false when we carry it further. The extensions in the soul need have no spatial relation to the physical world, nor again amongst themselves need they be spatially related to one another. When any phenomena are related spatially they are *ipso facto* parts of one spatial whole—so much is certain. But that all things spatial must be spatially related to each other is not certain but false. It is in fact a prejudice without any rational basis. The worlds of the *Arabian Nights* and of the *Pilgrim's Progress* have no spatial connection either with each other or with the room in which I write. These worlds have a common unity, that is certain, but they are not contained in one space. And whatever may be the case with Nature, in the soul there is an indefinite number of extensions between which no spatial relation exists. Each of these states so far, we may say, has a world of its own. And to urge objections based on the infinite or the finite character of space would once more here be idle. For the assumption of spatial unity would not help us to dispose of any one of such difficulties[2].

The soul contains extensions and it contains many extensions, but the soul is not extended. We have here in principle, I believe, the answer to our main enquiry. For a thing may have qualities that are spatial and yet itself need not enter

[1] I of course cannot raise here the question of the ultimate nature of the physical world, and ask whether and how far it exists outside souls. And whether in the last resort unperceived nature is even actually extended I again cannot here discuss. For the purpose of the text I have felt bound to assume that unperceived nature is extended.

[2] On all these questions I may refer the reader for some further discussion to my *Appearance and Reality*, Chapter XXII.

space, and the denial of this truth once more would rest on mere prejudice. Certainly to be extended cannot mean merely to own an unrelated spatial adjective. It must mean on the contrary to have a spatial relation beyond oneself, and hence oneself to pass into and belong as a part to an extended whole. But, this being admitted, the question is whether, without itself being extended, a thing cannot possess extension—whether, that is, we cannot say of a thing that it is extended in certain respects though not extended as a whole. And the answer, I presume, must turn on the position which in the thing's essence we have assigned to extension. If, that is, we make extension predominate in the thing's nature, and treat the other qualities as subordinate to, and as following from this special aspect, the thing itself clearly will have to enter a spatial world. But if on the other hand extension had no privileged or primary rank, if the thing's other attributes are in no way secondary or subordinate to that, but on the contrary perhaps superior in amount and in value—then clearly the thing itself will not be extended. The extension will qualify one or more aspects and adjectives of the thing, and these adjectives certainly will become parts each in its own spatial whole. But the rest of the thing's nature will remain aloof. You cannot so attach this outstanding nature to the extension as to carry it, and with it the whole thing, into a spatial order. The whole as a whole therefore will *have* extension, but—except in relation to one or more of its adjectives and just so far as they go—the whole will not *be* extended. If any of its states are spatial then, in respect of these states and so far, the thing must be spatial. But whether it is spatial otherwise and taken as a whole, will depend on the conditions. And the question is decided in each case by the relative importance of the thing's adjectives and by the position amongst these which extension occupies.

Now in the physical world, rightly or wrongly, extension may be taken as primary and predominant. And, if so, Nature will all be extended, and also, perhaps, will have to be viewed as enclosed in one space. The position of such qualities as, say, smells and sounds will remain irregular, for, though localized, they are not properly extended. Still extension, rightly or wrongly, has been given a superior standing. It is not one adjective on a level with others, nor can its connection with nature's essence be taken as mediate and conditioned. Nature *has* odours and tastes—here and there and under such or such conditions; but you can hardly say that nature *is* odorous or savoury in the sense in which you say it *is* extended. For every distinct partial aspect within a whole is possessed by that whole,

but they cannot, each alike, be said to qualify the whole directly and simply.

But when we pass to the soul the position and rank of extension is altered. It cannot any longer be taken as predominant or primary, but has on the contrary to accept a secondary, if not an occasional place. It is, we may say, undermined and overpowered by other adjectives. And hence the psychical whole *is* not extended. It merely has extension here and there, indirectly and as a quality of some of its states, between which states there need be no spatial relation at all. The psychical field of struggle is no space except by a metaphor, and the weapons of the contest are not velocity or mass. Nay the extended itself, so far as psychically it competes, does not compete primarily by means of and through its relative extension[1]. It struggles, as all psychical elements struggle, by intensity, by pleasure and pain and by the associative force of content. The soul has extension (we have seen), for it has "states" which are extended. And as a whole the soul possesses the adjectives owned by its partial states, and, in these respects and so far, the soul itself *is* extended. But to omit "here and there" and "in this and that point," and to predicate extension of the whole soul without condition and at large would be gravely erroneous. It would in fact be as absurd as it would be to call the soul sapid or odorous.

And this distinction between what the soul has and that which it is—the distinction between what the soul is itself, as a whole or directly, and what again it is indirectly and merely in respect of its parts—this distinction I take to be the solution of our chief problem.

I will notice finally some minor difficulties connected with the subject, though, as it seems to me, they do not affect our main conclusion. Not all extensions in the soul, we saw, are related spatially. But where they are so and are combined to form one space, is this unity itself extended? Now, if the several extensions really are imaged as coming together, their unity clearly has also become spatial, and as a psychical state the whole perception is so far extended. But where we think not in concrete imagery but abstractly, this result must be modified. Having the idea of several spaces we then may think of them as combined and as one, and we may do this without properly representing their union as spatial. For we may apply to them an abstract and extraneous idea of unity. And, if so, the resulting synthesis may itself not actually be

[1] So far as they are related spatially extensions in the soul can struggle for the same place. The basis of the struggle is here the partial identity of their content. It is in short a case of "contraries."

spatial, though always tending to become so[1]. Let us go on to consider another minor problem.

Let us suppose that, besides perceiving the place where I am, I think of other extended objects both present and past, objects some real and some imaginary. Now I may have several of these objects, I presume, at once, and may also consider them together. But where things in any sense are taken together that unity is of course a psychical state, and in the present case the question is whether we are to call this state extended. It is probably not extended always, but, with some persons at least, it always tends to become so, and all objects thought of together tend to become parts even of one visual field. But the whole question, however interesting, has no bearing on our principal result. For the unity and synthesis of these several objects certainly will not consist always in their presence within one visual field, but that presence rather may be itself a symptom and consequence of their unity. And my whole psychical state at any moment is of course never extended. The background of feeling, before which every object must come, consists largely of elements which not in any aspect are extended. And the unity of feeling is of course itself not spatial. With these brief remarks I must pass from problems which seem here not in place.

The result of our whole enquiry is briefly this. The unity of the soul is not spatial, nor as a whole is the soul extended. But here and there, without any doubt, it has features which are extended. And the soul is extended in respect of these features, while you consider it merely so far and regard it fragmentarily. But to predicate extension of the soul, when the soul is taken together and as one, is quite impossible. That is no better than it would be to term the soul acid or salt or fragrant. For in the soul extension is not a universal

[1] Even if the idea of unity which is applied is spatial, it remains doubtful how far the several extended objects become parts of one extension. If, for instance, I am asked to think of a number of bodies each of a different colour, these bodies being scattered in space or divided also in time, and then am asked to think of these bodies as close together in space—what, I suppose, happens is this. I apply a more or less abstract spatial scheme of diversity in unity, and I identify the coloured bodies with the diversities of this spatial scheme. Now, if my thought is rapid and remains abstract, need it imply the mental juxtaposition of the various colours? And, if not, how far and in what sense have the coloured objects become parts of one new extended state? We must reply, I think, that, so far, the bodies have not become parts of such a state, for they have come together spatially only from one side of their being. On the other hand this abstract unity tends naturally to become more concrete and to pass into actual mental juxtaposition of the colours also.

head or law under which adjectives fall; and, as an adjective, it is not all-pervasive. It is really but one among a number of predicates, its position is partial and its rank is secondary.

I may be allowed perhaps to append some remarks on "Extensity" and on my difficulties with regard to it. I was long ago convinced of two things. (*a*) We cannot, I believe, understand how the perceived spatial world arises (if it does arise) from what is quite non-spatial; and (*b*) the spatial perception, however it arises, cannot have at first the relational character of developed space (*Mind*, XII. 370 note). Hence it seems to me proper to postulate a mode of perception which gives, on the one hand, more than mere volume and, on the other hand, less than space. And yet extensity, as it is offered me, I cannot accept for the following two reasons. (i) I am not able myself to find extensity in observation anywhere as a fact. (ii) I cannot identify everywhere volume with extensity so as to deny all volume which is not "extensive." On the contrary I take extensity to be a specialized volume. And, though I probably have failed to understand the position of Mr Ward or of Professor James, and though I am aware that with regard to extensity they seem, at least, in part to differ very seriously, they appear to me to agree in what perhaps are two mistakes. Both seem to me to deny in effect all non-extensive volume, and to claim also to observe extensity as a fact.

(i) Whether extensity can somewhere be observed is perhaps a question of little moment, and on my own failure I should certainly not venture to stand. But since my own difficulty may be more than personal, I will endeavour to state it. And my experience is this. Whenever I observe I either get something which seems to imply space right out, or else I get something which seems not to have even extensity. I can find volume everywhere—that I do not doubt—but not all volume appears to me to come possessed of side-by-sideness, or even to have features joined and divided by any fixed order of relations. When on the other hand I dwell on my perception, it tends to become distinct spatially, without, so far as I see, becoming merely extensive. And my perception thus grows not spatial merely but spatial even visually. A compound smell or a confused organic sensation, nay, any kind of diversity and every possible distinction, in the end, when I dwell on it, becomes localized somehow in a visual field. And in short, while I observe, I find no way from an awkward dilemma. I must hold that all observed diversity and every distinction involves a character which is spatial right out, and in my own case visually spatial, though the elements themselves (*e.g.* smells) need not be extended. Or else, if I may take this character as but imposed by the process of my attending, and if I may deny that my mere perception of volume possesses it, then extensity itself seems gone with this justified removal. Or at least, while I keep to the observed facts, I myself cannot find it. I start with something which appears to be not so much as extensive, and I end with something which seems to imply what is fatally more, and during my progress I cannot make the required observation. And hence I should prefer to accept extensity as a postulate, if it were correctly formulated so as to fill the void stage in the development of space.

(ii) From this I pass to the second objection. Extensity, it seems to me, is a special kind of volume, nor could I deny the existence of volume without extensity. To such a denial I am in principle perhaps not opposed. Nay, if I had to assert that no diversity could be anywhere perceived without the help of spatial marks of distinction, that would

make but little difference in principle to any views I entertain. But I think such a doctrine is mistaken, and in the same way I must decline to identify volume with extensity. If I take for instance my whole condition at some one moment, or if I take some group of organic sensations, or again for example some complex smell, I am led to a very different result. In these cases I am aware of volume, of an uncounted plural whole, I certainly perceive a muchness but on the other side I cannot predicate extensity. I cannot find side-by-sideness nor can I find a fixed interrelated arrangement of any kind. There are qualitative differences within a whole, but these differences seem, not even as qualities, to have an ordered position and situation among themselves. They are neither continuous in this sense, nor are they continuous again as showing indefinite internal divisibility. They are no serial field in and on which motions, if only they could supervene, would find positions and so generate space. I at least cannot observe these characters given everywhere as fact, and I am therefore forced to suspect one of two things. Either these characters have been transferred from elsewhere into the facts, or I, as is likely enough, have not understood what extensity is to mean.

And since where one does not understand it is better not to insist on criticism, and since some obscurity seems to beset the use of "volume," I may perhaps do best if I attempt to indicate what I myself mean by it. In the first place "massiveness" seems not synonymous, for, if I imagine myself a balloon or a cloud, I am voluminous but not massive. "Oppressiveness" again would refer to a certain effect on me, and the more oppressive (a fur rug) is not always the more voluminous (a down coverlet). These terms may be dismissed as being clearly not the same as mere volume. It is volume where (*a*) positively I have a whole containing a diversity felt as a many and much of one somewhat, and (*b*) negatively it is *mere* volume so far as here I do not count any units or pass discursively through any relations. Again, to have *mere* volume strictly, I should not view my "much" comparatively and as being or as having more than something else is or has; and further, although the "much" has a quality, I must not take that quality as a degree, with a place, that is, on a qualitative scale dependent on quantity. There are comparative volumes of course and there are of course degrees in volume, but these are special developments of the two undeveloped aspects of mere volume. Mere volume has a manyness which neither is counted nor compared, and it has a quality of muchness which is not taken on its own scale as a more or less of itself. The aspects of volume, which we might call its intensiveness and its extent, are present and given, but are not distinguished and developed. And, after that result has taken place, I have still mere volume so far as I disregard the development and distinction.

Now it does not seem to me that this mere perception of an uncounted plural whole need imply side-by-sideness or fixed interrelation or serial arrangement, or, in any proper sense, continuity external and internal. Space, in short, has volume, but volume need not be spatial or even have "extensity." And, if I am wrong in this, yet the question calls, I think, for some enquiry.

With that enquiry perhaps might go a more careful treatment of the connection between amount and degree. And as a possible help, and by way of supplement to a former paper (*Mind*, N. S. No. 13), I will venture to add some remarks not original nor perhaps all relevant.

Psychical states must all from the first be more and less of one somewhat, but the perception of quantity is rightly placed later than that of quality, if, that is, quality is taken at its rudest stage. The sense of

something other and different comes, I believe, before that of more and less. But I certainly am not here attempting to derive or in any way to explain the origin of quantity. Quantity (however it comes) is another kind of change within the quality. When somewhat grows more or less it becomes otherwise without ceasing to be the same quality or thing. If red changes to green that is an altered quality, though I do not deny that quantity may also be involved in the change. But when red changes to more of red or redder, while remaining red, that is what we call quantity. And we are led to distinguish further because "more red" is ambiguous. It may stand for merely more of the same red, or it may mean that the red, while still red and while so far still the same, is also changed within itself and is now more or less as red. The redness itself here is opened to contain the diversity of an internal scale. Thus the more and less affected first only that which is red, but afterwards we have a more and less within redness itself.

Now it is not uncommon to speak of intensity and of extent as being aspects quite diverse. And when a greater extent of a quality, such as warmth, is in fact taken wrongly for a higher degree, we are told that volume and intensity are here confused or are not distinguished. But this explanation, though not untrue, seems partly incorrect. The real mistake lies, I think, not in failure to distinguish between extent and degree, but in failure to distinguish between two degrees or two amounts of different kinds. And I will endeavour briefly to make this clear.

Every perception of quantity, whether it is a perception of amount or degree, must possess the two aspects of extent and intenseness. Even in the case of degree the perception must contain an internal plurality, and even in the case of extent it must have as a whole a special quality (*Mind*, N. S. No. 13). There is a difference in the two cases, but the difference lies in the "that" of which we have amount or degree. If you take red and increase its degree, preserving the same spatial area, you gain more units, but more units of red and not of spatial area. If you keep the redness the same, while the spatial area is increased, you have a higher degree not of redness but of area which is red. And hence—since in each case there is an increase both in intensity and in extent, and since both increases come to us alike as a moreness of red—a confusion between them seems only natural. Nay the distinction between these aspects is presumably a late acquisition. But in theory this distinction can be turned into a hard division with erroneous results.

Volume itself is most certainly capable of degree. If you have a coloured surface which is red, that, even if you disregard its redness, has volume, and corresponding to that volume the surface as a whole has a quality. And if the coloured surface is increased by an addition which is not red but green, you will have an increase in volume and also in quality. Your perception will grow in intensity as it grows in volume, though neither this volume nor this intensity will belong specially to red or green. And then, coincident with and superimposed on this double growth, may come an increase in redness or greenness also two-sided. And all these changes, which partly are independent, partly must influence one another, and result often in confusion or even in positive mistake.

I do not know how far such remarks are relevant to the question in hand. They may serve at least to suggest that the connection between quality, quantity and degree is not simple, and cannot be disposed of easily. On the positive nature of extensity I have indeed said almost nothing. It has to be postulated and is not observed, and, while less than space, it is certainly more than mere volume. I have said no more because I doubt if I have more to say. And with what class or classes of

sensation we have to postulate this character, is an important question which I have not touched. Nay even that which I have laid down I am prepared to find mistaken. Every sort of diversity, after all, and every distinction may imply space proper, or, if not that, may imply something more or less spatial; and this last character again may be given in actual observation[1]. Volume without extensity may in short turn out to be an error. But whatever conclusion on these points may prove true in the end, the way to it, I am sure, is not short or easy. The introduction of extensity, in brief, I think has been useful, but extensity would be more useful if it were more thoroughly explained and discussed. By such an explanation I at least should expect to profit.

[1] Professor Sully (*Human Mind*, I. 95) seems to accept extensity only as hypothetical. If so, I do not understand what position he gives to volume and massiveness. In rejecting extensity wholly (*Appearance and Reality*, p. 35) I had in mind solely the fact as supposed to be observed. The remark was not intended to exclude a hypothetical form of space-sensation (Cp. *Mind*, XII. 370, note).

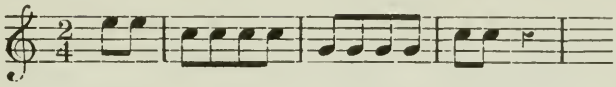
## VIII.—DISCUSSION.

### ON THE DIFFERENCE OF TIME AND RHYTHM IN MUSIC.

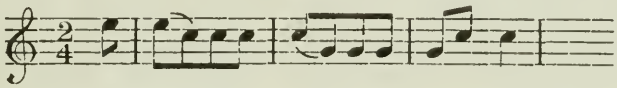
If I understand him rightly, Dr Wallaschek, in his suggestive article in the last number of *Mind*, puts forward views about time and rhythm with which I cannot agree either from a musical or a psychological point of view. At any rate he fails, in my opinion, to lay sufficient stress upon a point which is of the greatest psychological as well as musical interest. I mean the fact that the same series of notes, even if played in exactly the same way, will sound quite different, will form quite a different tune, to one who has the *Taktsinn*, if apprehended by him in different Takte[1]. A good musician plays in such a way as to suggest the 'Takt' he means to his audience, slightly emphasising certain notes in each bar or phrase; but one may hear the Takt without this aid, or on the other hand even hear it differently from what was intended by the player, in spite of it. I often find it difficult to understand a piece of music heard for the first time unless I have the score before me, simply because I do not rightly apprehend the Takt; for many performers, knowing the Takt themselves, omit to indicate it in their performance to their audience, though others (*e.g.* Leonard Borwick, or Santley) never fail to do so. For example, the first time I heard Beethoven's 7th Symphony I completely misapprehended one phrase, taking it as *viertaktig* instead of *dreitaktig*. It occurs near the end, at a change of tempo (*assai meno presto*). I think I could hardly have misinterpreted this phrase if it had been correctly played, as I have since heard it given by Richter, but the point I wish to emphasise is that when I did apprehend the phrase as it was meant, it seemed quite *a new tune* to me. It is by no means a matter of indifference to me (as it would appear to be to Dr Wallaschek) whether a piece of music is cut up into bars of three or four beats. But more than this, it is not a matter of indifference where the divisions of the bars occur, even if the number of beats is the same. I first learned the military trumpet calls out of a book, and when listening to the trumpeters

[1] Dr Wallaschek uses the words 'Time' and 'Rhythm' in senses precisely the opposite of those to which I have been accustomed, so to avoid confusion I will here use the less ambiguous terms 'Takt' and 'tempo.'

at practice there was a call which I could not recognise. It was this :—



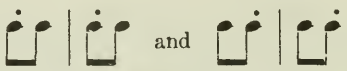
I asked the trumpeter what he meant by it, and he said it was "Slope swords." It ought to have been played thus, as given in the books :—



It will be seen that the notes are the same, the time-signature is the same, and the tempo is the same. Yet the Takt was different, and the difference was so striking that I did not recognise the call. It is true that I failed to make the trumpeter understand the difference, nor have I ever heard a trumpeter sound this call correctly (it is very seldom used on parade). But trumpeters are not as a rule musicians,—I have only heard one who sounded the Takt of the R. A. regimental call correctly ! Dr Wallaschek gives an example from the Tannhäuser overture, but it proves, not that a piece of music may indifferently be cut up into 3 or 4 Takt, but only that the time-signature does not always indicate the Takt in which the music is to be played. Sometimes, as here, the whole bars are to be taken as beats in a larger Takt, indeed this is generally the case in the sense which is spoken of as musical phrasing. But in the case in question the phrasing is a yet wider affair ; the music is here written in $\frac{4}{4}$ time merely because there are so many notes of the accompaniment to each one of the motif (the pilgrim's chorus). In another place Wagner does the same thing more explicitly. When Siegfried has just finished forging the sword he continues to sing the refrain "Nothung, Nothung" in three time, while Mime at intervals breaks in with a sort of aside in two time. The music is however all written in $\frac{3}{4}$, the difference being indicated by the words "Dreitaktig" "Zweitaktig," and at the end also "Viertaktig," written above the stave, and referring to the grouping of bars in a wider Takt. This shows that Wagner at least did not consider it a matter of indifference whether his music was considered zwei-, drei-, or vier-taktig. I am aware however that everybody does not appreciate the importance of the distinction. There is a kind of beast who delights in turning anything or everything into a waltz, whether it is in three-time or no. For example I have had the pain of waltzing to "I cannot sing the old songs" and still more frequently to "The distant shore." On the other hand a ruffian has jammed that beautiful old song "Far away" into a march !

But this brings me to the question—wherein does Takt consist ? I cannot agree with Dr Wallaschek that it is merely "*une faculté d'ensemble.*" The trumpeter was not 'ensemble' when he sounded

'Slope swords' wrong; nor for the purpose of working together would it be important to distinguish zweitaktig from viertaktig or even, except for convenience, from dreitaktig. It seems to me that the Takt lies not, if I may so express it, in the *cardinal* but in the *ordinal* numbers of the beats. The "Gefühlston" of a note in a musical phrase depends on its *position* in a bar, not merely on the fact of its being in a bar of so many beats. Wundt goes into the question pretty thoroughly (*Psychologie*, 4th Ed. Vol. II., p. 84) but explains Takt as being merely greater emphasis placed on certain notes, at certain intervals, and does not care about their ordinal position in the bar, whereas it seems to me that the greater emphasis, when given, is merely an empirical method of indicating that ordinal position. For example he says the two forms

 and 

might be employed indifferently to represent $\frac{2}{8}$ time. To me the two would represent essentially different ideas; and surely they would do so to a musician, for the second form would suggest what is known in music as syncopation. I think the best way to describe Takt would be to say that music is conceived as an accompaniment to a series of 'beats' at regular intervals (which may however be accelerated or retarded according to the tempo). Between any two beats the music is adapted to a set of secondary beats, dividing the time-interval into equal parts—generally 2, 3, or 4, though 5 and 7 have also been used. Each of these secondary beats may again be divided in the same way by tertiary beats, and so on; though practically tertiary beats are as far as ordinary mortals can go. The beats may be indicated by the player, by emphasising the note he is playing while the beat occurs, but we cannot say the beat *is* this emphasis, for once the Takt is apprehended by the listeners other notes in the bar may be emphasised. Those who have had the pleasure of listening to Leonard Borwick's rendering of the Rondo in Beethoven's 5th Concerto will appreciate what I mean. This way of looking at Takt brings out certain distinctions which are very important in music and which Wundt's scheme seems rather to obscure. In particular the difference between 'common,' and $\frac{2}{4}$ or $\frac{2}{2}$ time (between viertaktig and zweitaktig). In common time the last three notes are all of equal value in the Takt—or rather, there is only one primary beat to the bar of four secondary beats, whereas in the other cases there are two secondary and four tertiary beats. The difference has nothing to do with the difference between crotchets and quavers, which is only a difference of tempo, for a bar of four crotchets may be either vier- or zwei-taktig. In the latter case the time signature is generally written $\mathbb{C}$. The difference in musical effect may be observed by comparing the double quartett "For He shall give his angels..." with the chorus "Behold God the Lord passed by" in the Elijah (the former being vier- and the latter zwei-taktig) and imagining what they would sound like if the Takte

were interchanged. According to this view the 5 and 7 times in Tristan und Isolde, referred to by Dr Wallaschek, are not true Takte at all, but alternate bars of 2 and 3 or of 3 and 4 time, and this is precisely why they produce the feeling of unrest to which Dr Wallaschek refers. (This indeed is how they are written in the edition which I possess.) The difficulty of apprehending a true 5 or 7 Takt seems to me to lie solely in the difficulty of ideally dividing a time interval into so large a number of equal parts as 5 or 7. If this could be perfectly done, no feeling of unrest would result. In the case of such times as $\frac{6}{8}$, $\frac{9}{8}$, $\frac{12}{8}$ the difficulty is got over by first dividing up the time by a smaller number of secondary beats, and then subdividing each beat again. Thus $\frac{6}{8}$ is really zwei-, $\frac{9}{8}$ drei- and $\frac{12}{8}$ vier-taktig, the notes being in each case subdivided into triplets (tertiary beats). By an arbitrary convention on the other hand $\frac{3}{4}$ is taken to mean a dreitaktiges bar, subdivided when desired into pairs, or groups of four notes, to each secondary beat.

I think the above exposition will appear satisfactory to most musicians, but it is from the psychological standpoint that I regard it as of the greatest importance. Dr Wallaschek's view of Takt as '*une faculté d'ensemble*' seems to me altogether inadequate. No doubt there is something stirring in the feeling 'd'ensemble.' But this feeling may be experienced when riding with a troop of cavalry, and can be distinguished from the added feeling of marching in time with infantry; or still better, of marching to a band. Moreover it is obvious that the Taktsinn can be aroused without any 'ensemble' at all, as when one beats a tattoo on the table in an idle moment. Rather, I should say, the Taktsinn is connected with the sense of order and fitness. I seem to get the same sort of pleasure from the regularity and variations of musical Takt, as I get from contemplating an engineer's drawing, which is symmetrical, or purposively asymmetrical. The longer and more complicated a musical phrase is, if only one can get to realise it as a whole, the greater is the delight it brings from this source. But of course the power of appreciating Takt in music varies enormously in different individuals, and may doubtless be considerably affected by training. The trumpeter, poor man, could not understand the Takt of "Slope swords." On the other hand Mozart said the greatest delight he knew was when he had completely thought out one of his compositions, and realised it *all at once*, as a whole. To this delight no doubt the sense of order and fitness in the pitch of the notes in his melodies, as well as the sense of harmony, contributed; but from his laying such emphasis on the pleasure of realising it *all at once* it would seem that he was thinking rather of the orderly arrangement of the whole, in movements, phrases, bars, etc., in fact exactly what, as I take it, is the basis of the Taktsinn—and it is evident from his compositions that he had this sense in no ordinary degree, though he did not play such pranks with his Takte as some more modern musicians, perhaps for the sake of novelty, have done.

E. T. Dixon.

# IX.—CRITICAL NOTICES.

*Studies and Exercises in Formal Logic.* By J. N. Keynes, M.A., Sc.D., University Lecturer in Moral Science in the University of Cambridge. Third Edition, rewritten and enlarged. London: Macmillan and Co. 1894. Pp. xviii., 476.

All students of Formal Logic have become familiar with the *Studies and Exercises* of Dr Keynes, which has now reached its 3rd edition. The volume is to a great extent rewritten and considerably enlarged. As in other works from the same hand, the reader will be impressed with the author's lucidity of exposition, exhaustiveness of treatment, and sobriety of judgment. These qualities, which have gained for the Formal Logic a place in the front rank amongst English works on the subject, are even more conspicuous in the present than in preceding editions.

It is a matter of interest to compare the proportions assigned to the different parts of the work in the 2nd and 3rd Editions. The volume is divided into four parts, dealing respectively with Terms, Propositions, Syllogisms and Complex Logical Processes. In the 2nd Edition these parts occupy roughly, 50, 120, 160, 110 crown 8vo pages, respectively. In the 3rd Edition the corresponding parts take up 50, 180, 140, 80 demy 8vo pages. Thus the enlargement of the volume is mainly owing to greater fulness in the treatment of *propositions.* In fact special chapters are now devoted to *Real, Verbal and Formal Propositions* (in Part I.) and to *Propositions in Extension and Intension,* while the chapters on the *Diagrammatic Representation of Propositions,* on the *Existential Import of Categorical Propositions,* on the *Quantification of the Predicate,* and on *Conditional and Hypothetical Propositions* are considerably lengthened. This points to the growing importance of questions dealing with what is called the *import* of propositions in view of recent controversies. But, in comparing the last with previous editions, we are continually struck by the attention which the author has freshly given to every detail of the subject, and the many improvements in the exposition and discussion of difficult points.

It would be impossible within the compass of this review to note all the changes that have been introduced either with a view to meet objections and difficulties that have been raised, or with the object

of giving greater completeness to the doctrines of formal logic. But we may note some of the more important alterations.

The account of the distinction between concrete and abstract terms has been somewhat modified. "A concrete name" it is said "is the name of anything *regarded as possessing attributes;* an abstract name is the name of anything *regarded as an attribute of something else.*" The author then points out a difficulty in the fact that we frequently predicate one attribute of another attribute, and hence that the name of the latter takes on the character of a concrete term. The relation, however, is not reciprocal. For there are (concrete) names which can never be regarded as denoting attributes of anything else, whilst there are many (abstract) names of which some further modifying or qualifying attribute can be predicated. Hence the simplest distinction would seem to be between what can and what cannot be predicated as an attribute of something else. Dr Keynes's solution is, however, different. He concludes that "names which are primarily formed as abstracts and continue to be used as such are apt also to be used as concretes, that is to say, they are names of attributes which can themselves be regarded as possessing attributes." Dr Keynes later on contends that the name of an attribute can only be regarded as *general* or as *connotative*, so far as at the same time it takes on the character of a concrete name. But his treatment seems to me to lead further than he intends. He instances the proposition "Some colours are painfully vivid" to show that the (primarily abstract) name *colour* in being used as a general has become concrete, because an attribute has been predicated of it. But precisely the same argument would show that *any* abstract name, used as the subject of an attributive judgment, becomes thereby concrete: *e.g.* "The colour magenta is painfully vivid." Again he says that *virtue* "considered in relation to the various virtues (courage, temperance &c.) which constitute its sub-classes, is to be described as concrete, it may then be said to *denote* these various virtues and to *connote* the common property by reason of which they are classed together." Thus in the proposition "Courage is a virtue," the predicate becomes at the same time both *concrete* and *connotative.* But in this case the *subject* must also become concrete, for it is clear that we are regarding *courage* as possessing the attributes connoted by 'virtue.' Hence, if the classificatory proposition "Courage is a virtue" is to be regarded as equivalent to the attributive proposition "The colour magenta is painfully vivid," it would seem that any attribute-name—used as the subject of a proposition—becomes thereby *concrete* (unless perhaps we except the statement of a mere synonym, as in *courage is valour*). *A fortiori*, an attribute-name—used as predicate—must be taken as concrete. And hence we seem to be driven, by Dr Keynes's principle, to the result that any attribute-name used as subject or predicate in a non-verbal proposition must be considered concrete. However, as this question is admittedly of no importance for Formal Logic, we need dwell no longer on the point.

The treatment of Intension and Extension is considerably enlarged. Previous editions had emphasized the importance of distinguishing between the subjective, conventional, and objective modes of determining the range of attributes constituting the intension of a name. These distinctions are now carried into more minute applications. The term *connotation* is used for the *conventionally* determined intension of a name, and the term *comprehension* for the *objectively* determined intension of a class. Thus, under ordinary circumstances, *connotation determines denotation* and *denotation determines comprehension*. Moreover the comprehension of a term includes its connotation and, in addition, all the attributes that can be predicated universally of the term. Dr Keynes now introduces the term *Exemplification*, whereby further light is thrown on the mutual relations between extension and intension. Exemplification bears the same relation to Denotation as Connotation bears to Comprehension, and just as connotation is ordinarily used to determine denotation, so may exemplification be used to determine comprehension. Thus connotation is a set of attributes belonging to all the objects constituting the denotation and *to no others*. Similarly, exemplification is a set of objects possessing all the attributes constituting the comprehension and *no others*. The introduction of this term leads to many interesting results, and especially yields a clear account of the *inverse* relation between changes in extension and in intension.

As has been noticed above, questions dealing with the so-called *import* of propositions are treated at great length. Controversies that have arisen in this connexion are to some extent due to confusion between three distinct meanings of the term import. These may be called the *formulation*, the *interpretation* and the *fundamental analysis* of propositions. By the formulation of a proposition is meant its reduction to some canonical form. By its interpretation is meant the assignment of the precise degree and amount of significance to be attached to it. By its analysis is meant an examination into the nature of the thought-process and of the reference to reality which the proposition expresses. These three questions have to be determined on perfectly distinct principles and are primarily entirely independent of one another. In *formulating* propositions the logician is guided mainly by convenience. Before he can apply general rules for the manipulation of propositions, the sentences of ordinary discourse must be reduced to workable forms. In so doing his primary purpose is to leave the original significance of the proposition unimpaired. Thus traditional logic has reduced all categorical propositions to the form "All or some $S$ is or is not $P$." Different logicians have preferred other modes of formulating the traditional $A$ proposition: *e.g.* "All $S$ is some $P$," "The attribute $S$ is invariably accompanied by the attribute $P$," "The class $S$ is included in the class $P$," "$S$ is identical with $SP$," "There are no $S$'s that are not $P$" &c., &c. There are in fact many different relations involved in the same judgment; and, in bringing these out, the proposition may

be formulated in an indefinite number of ways. But ordinary language is often ambiguous: hence the need of *interpreting* any given form of words. Moreover, in the process of reducing propositions to new forms, the logician may unwittingly put more or less of significance into the proposition than it originally bore. Two examples may be cited. When Hamilton reduces "All $S$ is $P$" to the form "All $S$ is *some* $P$" (*some* excluding *all*), he is attributing *more* significance than would usually be intended, since the new form *includes* the assertion "Some $P$'s are not $S$." On the other hand, when Dr Venn reduces "All $S$ is $P$," to the form "There are no $S$'s that are not $P$," he is attributing *less* significance than would usually be intended, since the new form does *not* include the assertion "There *are* some $S$'s." Any scheme of formulation should however give scope for the expression of every variety of meaning that the speaker may intend. Thus, in Hamilton's scheme, the $A$ proposition may be expressed by an *alternative* combination of two of his forms: viz. "All $S$ is all $P$ or all $S$ is some $P$." And in Dr Venn's scheme, it may be expressed by a *conjunctive* combination of two of *his* forms, viz. "There are some $S$'s but there are no $S$'s that are not $P$." In this way, the question of formulation may be treated quite independently of that of interpretation. Critics of Dr Venn and Dr Keynes's treatment of the Existential Import of Propositions have generally confounded their two main positions: (1) that it is convenient to *interpret* universals as non-existential and particulars as existential, (2) that the propositions of ordinary discourse can be correctly *formulated* by means of (conjunctive or alternative) combinations of simple existential and non-existential statements. As to the former contention, both writers justify their interpretation on other grounds than those of mere convenience; but they certainly do not intend to legislate for others, but only to introduce internal consistency and simplicity into their own schemes. As regards the latter contention, the attacks made on the existential and non-existential formulation of propositions have proved the need for further explanation of the terms *existence* and *universe of discourse*. These are very adequately supplied by Dr Keynes in his third edition. Here no doubt it has been necessary to introduce discussions bearing on the *fundamental analysis* of propositions. Discussions under this head give rise to various controversies. Whether the judgment ultimately expresses a connexion of intension or of extension, whether the true relation involved is one of identity, of agreement, of concomitance or of inclusion, and what sort of reference to reality, to belief and to conception is implied—these are all questions giving scope for legitimate difference of opinion. But questions of *formulation* and of *interpretation* need never be treated controversially—except so far as a writer may be charged with inconsistency. It is with these two questions that Dr Keynes is mainly occupied. Thus the chapter on "Propositions in Extension and in Intension" brings out some of the various ways in which a proposition may be *formulated*. On the other hand, his chapter on

"The Existential Import of Categorical Propositions" deals with various ways in which propositions may be *interpreted*. That is, the former chapter shows the possibility of various forms into which a proposition may be cast without affecting its significance; while the latter examines the different amounts of significance (as regards existential implication) which may be attached to a given form of words. In discussing Hamilton's Quantification of the Predicate, three questions are involved—(1) whether the scheme provides a convenient formulation, (2) what interpretation is to be given to the forms so far as they are ambiguous, (3) whether there is any philosophical ground for considering the scheme as exhibiting the true nature of judgment.

The introduction of negative terms is a characteristic of modern formal logic, its thorough-going treatment originating from Boole and De Morgan. It gives rise to a schedule of 32 propositions, connecting two terms or their contradictories in place of the traditional 8. Dr Keynes presents the entire scheme and brings out the relations between the 32 propositions, in a compendious and symmetrical form. He has also applied Euler's and Lambert's diagrams for the representation of these relations, and thus introduced a completeness and symmetry previously wanting into the diagrammatic representation of propositions. The admission of negative terms entails the necessity of dealing with the universe of discourse which limits their range. It should be allowed that these modern conceptions have greatly enhanced the value of Formal Logic as an instrument of intellectual training. By their means the assumptions upon which the validity of the ordinarily recognised processes of inference depend are made evident. The opponents of these modern innovations have based their objections on two opposite grounds; first, that logic is bound to assume the 'existence' of all its terms, and secondly, that logic has nothing to do with 'existence.' Dr Keynes meets both these positions in a masterly manner.

We may conclude by drawing attention to the care with which Dr Keynes, in this 3rd Edition of his Formal Logic, has replied to all the important objections that have been urged against his treatment of the various details of the subject. In all cases he has been able at the same time both to strengthen his position and to improve his exposition. There are many new problems worked out, as well as fresh exercises for the student taken from various sources. It would be difficult to imagine a work that would be more stimulating or instructive than this for the intelligent student of Formal Logic.

W. E. Johnson.

*Die Gesetze und Elemente des wissenschaftlichen Denkens.* Von Dr G. HEYMANS, Professor der Philosophie an der Universität zu Groningen. Leiden: S. C. Van Doesburgh; Leipzig: Otto Harrassowitz. Bd. i. 1890, Bd. ii. 1894. Pp. 478.

"THE subject of this book," we are told in the Preface, "is two-fold: for non-philosophers it is a text-book of Epistemology, while for philosophers it forms a treatise on method, illustrated by examples. The endeavour to combine the two in a single book springs from my conviction that the empirical method of investigation and proof, which I wish to advocate towards my fellow-philosophers, is precisely the method of presentation best fitted for introducing men of scientific culture to philosophy."

This two-fold object necessitates a good deal of matter (for example the accounts of the Syllogism and of Mill's Canons of Induction) which except for the purposes of a text-book would be superfluous; and there is throughout an endeavour to avoid whatever would be too technical for the unphilosophical reader. Our author has, however, allowed himself one exception to this rule, in connection with the relation of Epistemology to Psychology, to which he addresses himself at a very early stage. His position on this question is one which might have been owned by Hume: Epistemology is a "Psychology of Thought," and is formally defined as "The exact determination and explanation, by means of the empirical investigation of given thought, of the causal relations which condition the occurrence of conviction in consciousness" (p. 3). Whatever may be thought of its philosophical merit, I cannot but think that a position so generally disputed must make the work somewhat unsuitable as a text-book; the more so, as the solutions proposed, at any rate throughout the first volume, are strictly in accordance with this view of the problem—*i.e.* they are solutions which account psychologically for our beliefs, instead of giving grounds for their validity. Accordingly the ultimate test of certainty is the "Gedankensexperiment"; the laws of Contradiction and Excluded Middle are regarded as "irreducible psychical laws suffering no exception," and are based on the impossibility which we feel (*empfinden*) of simultaneously affirming two contradictory propositions (p. 69). Similarly the laws of Arithmetic refer not to things, but to thoughts; they are purely psychological laws. And Geometry is regarded as established by explaining the genesis of space-perception through motor-sensations; these are subjective, and produced by our volitions, and appear to account by this property for the *a priori* certainty and exactness of the Euclidean system, in relation to which Dr Heymans adheres to the position of the Transcendental Æsthetic.

In all this there is, it seems to me, a confusion between the psychologically subjective and the logically *a priori*; the apriority of Logic, Arithmetic and Geometry being proved merely by referring them to subjective psychical processes. But no ground is

shewn for regarding the result as less empirical in the case of a "Gedankensexperiment" than in the case of any other kind of experiment. I fail to see how, except by the previous assumption of the whole array of the canons of inductive science, we can have any assurance that two such experiments will give the same result, nor how we can set any limits to the efficiency of the White Queen's practice in "believing as many as six impossible things before breakfast." In order to get a theory of knowledge out of psychology, it has been necessary to leave out of account the various emotional and pathological causes of belief, which certainly come under the above definition; it is throughout assumed that no *causes* of belief are possible except the evidence of the senses, logical reasoning, and certain fundamental *a priori* laws, *i.e.* the *grounds* of *correct* belief. In short the psychology of belief appears to be rather that which would apply to an intellectually ideal man than to men liable to error; accordingly error is regarded as springing only from deficient analysis, and this is the only answer we obtain to the question how the laws of thought can be at the same time norms for correct thinking and psychological laws for all thinking.

To illustrate this general criticism of the first volume, let us examine more in detail our author's views on Geometry, to the discussion of which a considerable space is devoted. Here Dr Heymans maintains a Kantian position, which he supports by Riehl's hypothesis of the generation of space-perception from motor-sensations. It is somewhat cavalierly assumed, as though no one had ever disputed it, that the propositions of Geometry are exact and of apodeictic certainty, and therefore *a priori*. The value of metageometry is taken to consist solely in the fact that it has proved the axiom of parallels to be independent of the others and essential to the Euclidean system. The indispensable axioms are regarded as five in number: Every point is determined by three coordinates; these vary continuously; bodies can be moved without distortion; through any two points only one straight line can be drawn; and through any point only one parallel can be drawn to a given straight line (p. 188). These axioms are regarded as all necessarily deriving their evidence in the same way, and are not discussed separately; though the results of non-Euclidean Geometry would seem to necessitate a division into three classes, omitting the second, which is in my opinion involved in the third, since the idea of mobility is only applicable to a continuum. As to the other four, the first deals with a purely sensuous quality of given space, which has no *logical* importance; the extension to four or $n$ dimensions would not invalidate three-dimensional Geometry any more than the 3rd dimension invalidates Plane Geometry. In fact this axiom might almost be called statistical; the number of dimensions must be a positive integer, so that we are not in the realm of approximations any more than in counting the number of people in a room, and accuracy can therefore hardly be taken as evidence of apriority. The third, the axiom of Congruence or free

mobility, on the contrary, has, I think, no *sensuous* import; for, as Dr Heymans observes in answer to Helmholtz, any apparent exception to it on the part of actual bodies is always to be regarded as due to physical rather than geometrical causes. But its *logical* importance is such that without it Geometry in every form would be impossible; no means would exist of discovering *how* objects changed their shape in moving from place to place, since the change would affect the measure as much as the thing measured. There is also a philosophic absurdity in denying this axiom, for if shapes were changed by mere motion, they must depend on absolute position, and bodies would be determined by their relation to empty space. Between these two extremes come the fourth and fifth of the above axioms, which seem to answer pretty closely to Klein's definition of axioms in general, that they are postulates by which we rise from the inexactness of sense to the perfect exactness of Mathematics. For, as every one knows, they are equivalent to the assumption that the measure of curvature of our space is zero; and since here it is logically possible, by supposing the measure of curvature small, to make *small* departures from such an assumption, (which was not possible with the first axiom), it is difficult to see how sense can give us accuracy beyond the limits of the errors of observation.

These considerations seem to me to necessitate a separate discussion of the different classes, but Dr Heymans treats them as all alike exact and certain; this certainty, however, must, he thinks, refer to something other than given objects, since mental images suffice to give perfectly correct results, though they can never accurately reproduce those objects. This something is the motor sense, in terms of which he tries to explain all his five axioms. Motor-sensations are subjective, and they are brought forth by our own volitions; these facts are supposed to establish Geometry on a Kantian *a priori* basis.

Apart from the psychological validity of Riehl's hypothesis, this theory of Geometry seems to me very inadequate to Dr Heymans' contention; if Geometry really does deal with motor-sensations, it must, one would think, be merely a branch of empirical psychology. I fail to see in what sense motor-sensations are less phenomenal or more *a priori* than any other sensations, and I should have supposed Hume's difficulties with the *minimum sensibile* would have rendered so sensational an account impossible, unless one were willing to throw to the winds all claim to exactness on the part of Geometry. The entire theory seems to me to rest on the confusion of the *a priori* with the psychologically subjective, which underlies the whole first volume.

The second volume, which deals with Causation and Mechanics, is for the most part free from this confusion, and consequently appears to me to be of much greater epistemological value than the first. In Logic, Arithmetic and Geometry, we had not yet, in Dr Heymans' view, got beyond self-knowledge; our judgments always

referred to our own thoughts and feelings. But with the consideration of the real category of cause, we rise to the problem of the knowledge of Not-Self. All Induction rests, directly or indirectly, on Causation, on the definition of which much care is bestowed. After an excellent criticism of the views of Mill and Jevons, Dr Heymans declares in favour of Hamilton's hypothesis: causation is equivalent to the axiom that a real creation or destruction is impossible. Having chiefly Mechanics in view, he shews that this axiom accounts for the equivalence of cause and effect, and explains their connection with the logical couple of ground and consequent. The latter being, in accordance with the first volume, taken as a case of psychological causation, our knowledge of the cause is, assuming Hamilton's principle, the ground of our knowledge of the effect, which essentially is nothing but the perpetuation of the cause (p. 387).

The view of Causation thus gained is now applied with great success to Mechanics. The laws of motion cannot be wholly empirical, for they refer to absolute motion, which is not a possible object of experience. (This is proved by the following argument: If the whole universe were rotating with uniform angular velocity, the laws of motion would require the appearance of centrifugal forces, causing quite a different distribution of matter from that which would otherwise exist; but such a motion could never directly appear to the senses.) The *a priori* element is Hamilton's principle. But the laws are not *wholly a priori*; the first law for example may be thus formulated: The changeless state which, in the absence of any disturbing cause, a body must preserve is not rest, but uniform motion. Hamilton's principle leaves both these alternatives as possible, in fact the former *was* taken by the ancients and by the Aristotelians; the function of experience has been to decide in favour of the latter. (It may be observed that the alternative only exists on the assumption that the law refers to *absolute* motion: in relative motion there is no difference between rest and uniform velocity.) The other laws are similarly explained by the application of Hamilton's principle to experience, and this is, in my opinion, much the best section of the book.

As regards Mechanics, Causation in the above sense is probably all that the science requires, being quite superfluous in the sense of efficiency, as is shewn by the superannuation of the idea of force and its supersedence by that of energy. Also it is noteworthy that the mechanical properties of the universe as a whole, its mass, momentum, and energy, are regarded by Mechanics as constant. Of course, the principle is only what Kant would call regulative, not constitutive; we search for as much constancy as possible, but a thorough carrying out of the principle, if applied, as Mechanics requires, to attribute as well as to substance, would involve the task of explaining away all change; the effect cannot be regarded as *identical* with the cause, or all happening must disappear. The use of the principle in Mechanics involves the abstraction of motion

from the moving matter; these two are regarded as separately constant, though the motion is allowed to be transmitted from body to body; in fact, the orthodox mechanical doctrine might be compared to the Transmigration of Souls. Thus the principle is not applied to the real, but to an intellectual and abstract construction of the real, resting on the distinction of substance and attribute. Its efficiency in Mechanics, which depends throughout on this distinction, is thus comprehensible: but it remains a question whether some theory in which cause and effect are less homogeneous, in which there is still some idea of activity, might not be necessary in other sciences, *e.g.* Psychology; at any rate, Psychology is not yet in the state where its laws can be *seen* to flow from the indestructibility of existence. Dr Heymans has not discussed any other sciences than Pure Mathematics and Mechanics; it would have been interesting to see how far it was possible elsewhere to apply the same view.

The chief value of the book seems to me to lie in the analysis of the laws of motion, and in the exposition of the *a priori* elements contained in them. The whole account is thoroughly self-consistent, and shews a distinct superiority to his opponents, Mach and others, who maintain a more empirical position. In the first volume there is some good critical work, for instance in connection with Lange's geometrical theory of formal logic; but the constructive work is impregnated with his psychological view of Epistemology, and I must therefore regard the discussion of Mechanics as the portion of the book best worthy of attention and of most permanent value.

B. RUSSELL.

---

*Introduction to the Theory of Science and Metaphysics.* (*The Principles of the Critical Philosophy.*) By Dr A. RIEHL, Professor of Philosophy in the University of Freiburg i. B. Translated by Dr ARTHUR FAIRBANKS, Lecturer on the Philosophy of Religion in the Divinity School of Yale University. London: Kegan Paul, Trench, Trübner and Co., Ltd. (The English and Foreign Philosophical Library), 1894. Pp. xvi., 346.

PROFESSOR RIEHL'S work on Philosophical Criticism is already well known in this country; and the appreciative article on it by Professor Adamson in this *Journal*[1] has rendered any further introduction superfluous. The volume now before us is a translation, with some slight omissions and alterations (sanctioned by the author), of the third part of the work, the part to which Professor Adamson's article chiefly referred. This is no doubt the most interesting portion of the book; yet one cannot but feel some

[1] Old Series, vol. XIV., p. 66.

regret that it should be presented to the English reader without the other two volumes which led up to it. The chief value of Dr Riehl's book consists, I suppose, in its being one of the most serious and systematic attempts (perhaps the most serious and systematic attempt) to carry out the views of those who believe that philosophy ought to be limited to epistemology. Those who hold this view may perhaps think that the work retains its substantial interest even when it is presented thus naked and unabashed without its introductory apology; but those of us who are more sceptical with regard to its fundamental position will be apt to think that the chief justification for its existence lay in its historical connexion with the ideas of Locke, Hume, Kant, and one or two others, and that it loses much of its significance when this historical justification is suppressed, even if it be true (as I believe it is) that the attempt to apply the ideas of Kant to the problems of modern science is the most interesting feature in the book.

And if the book thus loses something by being shorn of its first two volumes, I think it loses something also by the difficulties of translation. For instance, it is doubtful whether the necessity of rendering *Empfindung* by Sensation does not do some slight injustice to the author. I do not think it does him much injustice; for after all *Empfindung* does mean Sensation, and Dr Riehl's use of the term seems to indicate a fundamental weakness in his philosophical position. Still, if we might translate the word, as Professor Adamson suggested, by Apprehension or even Sense-Apprehension, the crudity of the position would at least be a little mellowed. That Dr Riehl does not really mean anything quite so crass as he seems to say (*e.g.* on pp. 33, 42—3, &c.), in representing Sensation as the original datum in all knowledge, is made apparent by comparison with some of his other remarks (*e.g.* pp. 53—4); but I cannot convince myself that he has made his view clear, or that his treatment of the subject can be regarded as sound philosophising, however we may translate his terms.

While we are on the subject of translation, it may be remarked that Dr Fairbanks seems on the whole to have done his part of the work conscientiously and well, though not always happily. His renderings are often rather wooden, and sometimes scarcely convey the meaning of the original. Thus "tendency" on p. 20 does not quite bring out the force of "Tendenz," which implies rather a regulative ideal. "The right form of statement means the same for a metaphysical problem as for a mathematical expression" (p. 33), is not a very clear translation of "Was für eine Gleichung ihr richtiger Ansatz, ist für ein metaphysisches Problem die richtige Fragestellung." "False conclusions" (pp. 90 and 94) is no doubt a fairly literal rendering of "Fehlschlüsse"; but would not "fallacious inferences" make the meaning more apparent to most English readers? Is "denial of a question" (p. 91) good English for giving a negative answer to a question? "The spirit...knows itself ever at its goal" (p. 96) is a curious way of saying that it is continually

anticipating its goal. "Does perhaps the conviction belong" (p. 124) is surely a too faithful rendering of "Gehört vielleicht die Ueberzeugung." "Instinctive or habitual action" is in the original "instinctiv *geworden*," and without this addition the use of the term "instinctive" would be somewhat inaccurate. To "regard" a thing "more important" (p. 91) and "to go back of the position reached by Kant" (p. 178) are doubtless modes of intellectual activity that are more familiar in America than in this country; and perhaps we ought not to complain of these; but is "the *systematic* of phenomena" (p. 269) either English or American? These are of course slight defects; but they mar what is otherwise a good translation. The omission of "persuaded" on p. 321, line 22, is doubtless only a printer's error.

As regards the substance of the work, I find myself in the main in agreement with Professor Adamson, except that some of his commendations are expressed in terms which I could not very heartily endorse. The author's strong point is, I think, his real grasp of modern scientific conceptions. All that he says about the "mythology of physical science" (*e.g.* p. 200), about "the reign of law in nature" (*e.g.* p. 235), about the general significance of "laws of nature" (*e.g.* p. 308), and kindred points, seems to me to be admirably conceived and expressed. Similarly, his remarks on the connexion between the logical and the moral (p. 77, note), on the idea of development, as not a means of explanation, but rather as something to be explained (pp. 77, 113—4, &c.), and various other side issues, have a high degree of suggestiveness. And the whole chapter on "Determinism of the Will and Practical Freedom" (Part II., chap. III.) is penetrating, and even profound. Nor do these references by any means exhaust what might be said in the way of praise. But I find a pretty heavy reckoning on the other side. The running fire against constructive metaphysic does not strike me as very heavy artillery. Much of what Dr Riehl says in this connexion I cannot characterize otherwise than as shallow. It is no doubt true that there is apt to be a personal element in constructive philosophy (pp. 11, 89, 100, 345, &c.), that in a certain sense the desires enter into philosophy (p. 15), and that in several other respects philosophy is not quite similar to the particular sciences. But whether philosophy is the worse for this, and, if so, how much worse, and how it is to be cured, it would require a somewhat calmer physician than Dr Riehl to determine. His treatment of such matters is wholly uncritical. He dogmatizes about them as confidently as Professor Tait or the first man in the street. That his dogmatism is anti-dogmatic makes it none the better, but rather the worse. When he writes, for instance (p. 105), that "The world of metaphysics is a thought-world, an imaginary world of logical shadows, which have lost their reality with their existence for sense-perception; it is not the world of real things and processes, *i.e.*, those which affect sense," what answer can anyone make to such stuff, except "Thank Heaven, it is not"?

We learn further (p. 117) that "metaphysics knows only the syllogistic deduction." After this it is not so surprising to be informed (p. 154) that consciousness is a phenomenon, or that human thought is a "little motion in the brain" (pp. 106, 339). Again, it appears (p. 316) that "Nature develops eyes which never see, *e.g.*, in embryos which perish before they see the light. How then can seeing be the final cause that determines the formation of the eye?" Here at least is reasoning which surely goes far beyond the syllogism. So indeed does the entire chapter on the reality of the external world (Part II., chap. I.), the whole of which is surely as shallow as any man could wish; though it must be allowed that it contains not a bad joke on Fichte's deduction:—"How is the existence of beasts of prey to be explained, beasts that may sometimes feed on the *ego*, subject of duty and of reasonable action, skin, hair and all?" Much is made, throughout the whole book (see especially p. 66), of the *social* element in experience; but I agree with Professor Adamson in thinking that this idea is not dealt with in a very fruitful way. It is really little more than an attempt to explain away the universal character of thought.

On the whole I do not see what can be said about this book except that it is written by one who has a sound grasp of modern scientific ideas, an excellent appreciation of the work of Locke and of Kant (at least on its more negative side), but a painful lack of insight into the aims and methods of constructive philosophy. These are qualities which the writer seems to share with a considerable number of his countrymen at the present time. It seems to me to be distinctly open to doubt whether the translation of this volume has provided us with an important addition to English philosophical literature. English philosophy is in its youth; but surely we have got beyond this.

J. S. Mackenzie.

*A Study of Ethical Principles.* By James Seth, M.A., Professor of Philosophy in Brown University, U.S.A. Blackwood and Sons, 1894. Pp. ix., 460.

This book consists of an Introduction (containing chapters on the Ethical Problem, the Method of Ethics, and the Psychological Basis), and three Parts, on I. The Moral Ideal, II. The Moral Life, and III. The Metaphysical Implications of Morality (*viz.* the Problem of Freedom, the Problem of God, and the Problem of Immortality).

The author explains that his aim is rather to discuss principles than to develop a system, and that he has had it specially at heart to throw "light upon the real course of Ethical thought in ancient and in modern times."

The question of Ethics is preliminarily stated to be, What is man's chief End? or What is the true normal or typical form of

human Self-hood? And this is subsequently stated to be equivalent to an inquiry into the central principle of moral or spiritual life—"the task of the moral philosopher is not to construct a system of rules for the conduct of life—we do not live by rule—but to lay bare the nerve of the moral life, the very essence of which is spontaneity, and growth away from any fixed form or type." "The moral life precipitates itself in unformulated principles of action."

The Moral Ideal is "an ideal of *character* to be realised by the individual, and his attitude to it is one of obligation or duty to realise it. It is something not to be *got* or to be *done*, but to *be* or to *become*. It is not to be sought without but within; it is the man himself in that true or essential nature in the realisation of which is fulfilled his duty to others and to God. All duty is ultimately duty to oneself."

In Part I. the solution of the Ethical problem is attempted, and we find the subject treated under three heads—three "types of ethical theory"—namely, Hedonism or the Ethics of Sensibility, Rigorism or the Ethics of Reason, and Eudaimonism or the Ethics of Personality.—Practically the questions asked under these three heads are, Is the End or Ideal an End of mere Sensibility, or is it an End of mere "Reason," or is it not rather a composite end including both the others—an End suited to a *Person* who is both rational and sensitive?

The view of the author is that "when we look at the history of Ethical thought, we find that, from the beginning of reflection down to our own time, two opposite types of theory have maintained themselves....On the one hand man has been regarded as either exclusively or fundamentally a sentient being....On the other hand it has been held with no less confidence that man is either exclusively or essentially a rational being, and that his Good is therefore not a sentient but a rational Good."—A little further on however we are told that "neither of these extremes can long maintain itself." And the author's view of the actual course and development of Ethical thought becomes still more difficult to grasp when we learn that "the more excellent way" of a compromise between Hedonism and Rigorism is to be called, *after Aristotle*, Eudaimonism (or the Ethics of Personality), and (in chapter 3 of Part II.) that the Ethics of Plato and Aristotle are eudaimonistic, and again find Butler brought under this head, whereas in chapter 2 he is treated of as a Rigorist, and in chapter 1 Plato and Aristotle seem to be assigned to the same category.

As regards the name Eudaimonism and its relation to Aristotle, Prof. Seth considers that Aristotle adopted *Happiness* as End, but he explains that Happiness is not to be understood as meaning Pleasure and absence of Pain. It would perhaps have been more conducive to clearness to accept the ordinary meaning of Happiness rather than the misleading interpretation fastened by earlier English moralists on the term εὐδαιμονία, which Aristotle uses.

It is not plain to me how a combination of Hedonism with Rigorism could be accomplished in any way except by showing that Happiness (in the ordinary sense) is the End approved by Reason—for the only definite information we receive as to the content of the Rigorist end, is that it is *not* Pleasure, *not* a Good of Sensibility—the watchword of Rigorism is Self-sacrifice or Self-denial, while that of Hedonism is Self-gratification. Nor is it plain how, precisely, in Prof. Seth's treatment, the important step from rational Hedonism and hedonistic Rigorism to Eudaimonism is mediated. If all that is wanted is to reconcile the "Ethics of Sensibility" and the "Ethics of Reason," this appears to be accomplished both in hedonistic Rigorism and in rational Hedonism. And further, what exactly it is that Eudaimonism prescribes, what it is that is meant by that precept *Be a Person* which is presented to us as "the key to the ethical harmony" achieved in Eudaimonistic Ethics, seems difficult to arive at.—Self-control, regard to life as a whole, synthesis of the "manifold of sensibility," and so on, do not suffice to distinguish a good life from a bad; the death of the lower self and the triumph of the true and rational Self, or Personality, may be an acceptable ethical Ideal, but without further explanation it is as vague as Self-realisation itself—it provides no criterion, it leaves the outlines of the Ideal absolutely undetermined—it may be fitted to any ethical end, provided we allow that any such end must be an end recognised as right and reasonable.—We all admit that the lower Self ought to be subject to the higher—what we need to be told is how to distinguish the higher from the lower, and how to subordinate the one to the other.

Hence even if we accept Prof. Seth's account of the "dualism" of Ethical theory, and endorse his view of the inadequacy of both Hedonism and Rigorism, we yet do not find in the Eudaimonism which he offers us either a reconciliation of the rejected doctrines or an ethical theory which is in itself satisfactory.

But moreover that account of ethical dualism does not appear to be historically justified. The fundamental struggle between opposing ethical theories (as between opposing principles of action in matters of practice) has been rather between Self-interest and Virtue, which, as commonly understood, includes "regard to common good," that is, regard to the interest or happiness of others. A *merely* "Rigorist" Ethics, or an Ethics of *mere* Sensibility is as much a chimæra as Form without Matter or Matter without Form. It is no doubt true that certain systems and certain men lean to Self-gratification, and others to Self-denial, but a theory of which the principle is the merely negative and highly indefinite one of Self-denial, has no right to call itself an Ethics of *Reason*, nor can Self-gratification be accepted without explanation as the principle of all hedonistic ethics.

In Part II. (the Moral Ideal) we have a chapter on the Individual Life, in which Temperance or Self-discipline, and Culture or Self-development, are considered; and a chapter on the Social

Life, containing sections on the Social Virtues (Justice and Benevolence) and the Social organisation of Life (the Ethical Basis and Functions of the State). Temperance on its negative side is said to mean the reign of reason amid the chaos of natural impulse, the subjection and obedience of sensibility to reason.—In its positive aspect, Temperance means concentration, or unity of purpose, Self-limitation. "Diffusion means waste.....the strong and effective man is the man of one idea, of one book, the Specialist."

When we pass to the consideration of Culture, it appears that it is *all* the human powers of the individual, "the total Self," that is to be developed. "Culture means not merely the cultivation of the several capacities, but the symmetrical development of all." There seems at first sight a slight discrepancy between culture of this kind and the limitation required by Positive Temperance; and the symmetrical development of *all* one's capacities seems, even taken alone, a somewhat impracticable ideal. We are told that self-culture fits us for the service of others, and that we must *be* ourselves before we can help others to be—and the best we can seek for others or for ourselves is "so to reflect the moral universe that none may have cause to travel beyond himself to find the fellowship of a common life and a common good."

As regards the relation between Justice and Benevolence, we find Prof. Seth's view to be that Benevolence may be best described as Positive Justice—while the "essential identity" of Justice and Benevolence is spoken of as a fact.

With regard to the relation of the State to the individual, we are told that "the State exists for the sake of the person, not the person for the sake of the State." The State is the medium of the ethical life of the individual. "Neither the State nor the individual is the ultimate ethical end and unit, but the person." "The State at best is the work of man's feeble hands, working with unsteady purpose; the person with all his claims is the work of God."

But if God made man, and man made the State, is not the State also God's work?

The treatment of this part of the subject seems to me especially inadequate and unsatisfactory. Here as elsewhere everything is brought back to Personality—but what guidance or enlightenment can we fairly extract from that notion? We are all Persons, no doubt—but some of us are good and some of us are bad, and the mere notion of Personality cannot therefore help us to identify the right end of action.

The discussion in Part III. of the Metaphysical Implications of Morality is interesting, but the three time-honoured problems dealt with remain unsolved.

I have not space to consider Prof. Seth's view of Ethical Method or of the relation of Psychology to Ethics, both of which subjects he treats briefly in the Introduction, and would only remark in conclusion that the book appears to me to be in many

respects attractive and admirable. It is unusually readable, being written with spirit and enthusiasm, and in a style which, while never undignified, is also never heavy, wearisome, or obscure,—hence in spite of faults I think it more likely than almost any other handbook of Ethics with which I am acquainted to inspire the reader with interest in the subject, and to convey, even to the mind of a beginner, a considerable amount of ethical information.

The faults of the book appear to me to be largely due to a certain hastiness or laxity of thought; and a careful Index, or analytical Table of Contents, would probably have contributed in an important degree to the removal of some of the defects to which I refer.

E. E. C. Jones.

## X.—NEW BOOKS.

*Monism as connecting Religion and Science: The Confession of Faith of a Man of Science.* By Ernst Haeckel. Tr. by J. Gilchrist, M.A., B.Sc., Ph.D. London: Adam & Charles Black, 1894. Pp. viii., 117.

An address by Professor Schlesiger before the *Naturforschende Gesellschaft des Osterlandes* at Altenburg on 'Scientific Articles of Faith' moved the author of *A Natural History of Creation* to state his own creed to the members of the same society.

Later, as he tells us, a desire 'to give expression to that rational view of the world which is being forced upon us with such logical rigour by the modern advancements in our knowledge of nature as a unity,' and to 'establish thereby a touch between religion and science,' moved him to publish a revision of his address. What moved Dr Gilchrist to translate it must remain a mystery.

Professor Haeckel's creed is a brief one. He believes in 'the mobile cosmic ether as creating divinity, and the inert heavy mass [atoms] as material of creation.' He regards this creed as the reverse of dogmatic, or so we gather from his scorn of dogmatism in general. When, however, a writer assures us on one page that 'our ideas of space and time are quite other than those taught by Kant a hundred years ago; the 'critical' system of the great Königsberg philosopher exhibits dogmatic weaknesses of the most pronounced kind'; and two pages later gives us an accurate description of the 'inalienable and fundamental' properties of mass-atoms, such as their ubiquity in space, their like size, their spherical form, their impenetrability, etc.; one is uncertain as to just what his conception of dogmatism, at least with regard to space, is.

Professor Haeckel further regards his creed as monistic, and means by dualistic systems those treating 'God and the world, creator and creature, spirit and matter, as two completely separated substances.' Yet his own 'ultimates' are two, mass-atoms and ether, which he expressly makes equivalent to creature and creator, and even, in a note, to 'spirit' and 'body.' Lastly, he declares that his faith satisfies all the needs of the human soul, moral, æsthetic, and religious. After having drawn a vivid picture of 'the relentless war of all against all' in nature, the 'unceasing and terrible war of existence' which science discovers to us, he chastises 'a sickly and unnatural theology' for having made the world 'repulsive as a vale of tears,' and ends in a truly national frame of mind by adoring 'the True, the Beautiful, and the Good.'

Materialism is a perfectly respectable dogma, but one thing it cannot do; it can never satisfy what Prof. Haeckel calls the 'yearning spirit,' the moral nature. If our world is to be reduced to mass-atoms and ether, well and good; at least let us be spared sentimentality over the subject.

M. Washburn.

*Plato's Republic.* The Greek Text edited, with Notes and Essays by the late B. Jowett, M.A., Master of Balliol College, and Lewis Campbell, M.A., LL.D., Emeritus Professor of Greek in the University of St Andrew's. In three volumes. Oxford, at the Clarendon Press, 1894. Pp. xv., 465; xxxiv., 340; 484.

The contribution of the late Master of Balliol, as far as it is separable from that of his co-editor, consists of the 'general remarks on philosophy and life' in the Notes, an essay 'on the Text of Greek Authors and especially of Plato,' and three fragments. Of Mr Campbell's work the parts that are most important from a strictly philosophical point of view are an essay 'on the structure of Plato's Republic and its relation to other Dialogues' and an account of Plato's philosophical terms.

Mr Campbell dismisses the theory of Krohn and the other separatists, that v, vi, vii are later than the other books, but finds it worthy of notice, chiefly as emphasizing the divergence between the practical or Socratic and the speculative aspects of Plato's thought. Even in the central portion itself Mr Campbell finds a difference of view. In the allegory of B. vii 'the distinction between πίστις and εἰκασία is dropped' and 'the actual scientific processes which rank with διάνοια in B. vi are now degraded to the level of ordinary experience.' His assumption is briefly this. The ordinary man who is untrained in mathematics and dialectic corresponds to the prisoner in the cave who sees only the shadows on the wall: πίστις and εἰκασία together correspond to the shadows on the wall: and mathematics, corresponding to the ἀγάλματα σκευαστά, falls inside δόξα. The obvious interpretation which takes the ἀγάλματα to represent not the εἴδη, but the εἰκόνες, of mathematics, *i.e.* the lowest segment but one of the Divided Line, seems simpler, and besides finds no inconsistency in the text; for the prisoners who see only the shadows, though not corresponding *directly* to ordinary men, are still 'like us' in taking a part of reality for the whole. This simpler view seems to be supported in a footnote by the present Master of Balliol, Vol. ii, p. 13.

So long ago as 1867 Mr Campbell maintained that the dialectical dialogues come between the Republic and the Laws. This has been confirmed within the last few years and is at last generally accepted. Without admitting anything so definite as a 'later theory of ideas' Mr Campbell thinks that 'it is possible to trace' in the dialectical dialogues 'the development of a metaphysical attitude different from that of the Republic.' His exposition of the later period is however too brief to require special notice. The pages on philosophical terminology will be of great service to students of Plato.

*Psychology for Teachers.* By C. Lloyd Morgan, Principal of University College, Bristol. London: Edward Arnold, 1894. Pp. x., 251.

We learn from the Preface by Mr Fitch that "the present volume consists mainly of a course of lectures addressed especially to students who are in training for the office of public teachers." It bears marks of its origin. Mr Morgan's style is always pellucid and attractive; but in the present work it is so smooth and easy, so full of illustrations, and so gradual in its transitions, that the psychologist will, for that very reason, find it difficult to read without skimming and skipping. This feature, however, is probably a great merit in view of the purpose for which it is intended. Certainly none of the students for whom it is specially designed are likely to complain of it as either dry or difficult. If they do not find it useful, it will be their own fault. The psychological doctrine would be

admitted by all competent psychologists to be essentially sound, and the applications to educational practice are throughout illuminating and suggestive. Perhaps in this respect the best chapters are those on Language and Thought, on Literature, and on Character and Conduct. As a first book or Primer of Psychology for educational purposes, we cordially recommend Mr Morgan's work.

*The Philosophy of Spinoza as contained in the First, Second, and Fifth Parts of the "Ethics," and in Extracts from the Third and Fourth.* Translated from the Latin, and edited with notes by G. S. FULLERTON, Professor of Philosophy in the University of Pennsylvania. New York: Henry Holt & Co. 1894. Pp. vi., 358.

*Ethic of Benedict de Spinoza.* Translated by W. HALE WHITE and AMELIA H. STIRLING. Second Edition. London: T. Fisher Unwin, 1894. Pp. cv., 297.

Without any disparagement to Professor Fullerton's learning or acumen, we must express our opinion that he would have done better if he had refrained from meddling with Spinoza. He lacks sympathy with his author, and the insight which springs from sympathy. Principal Caird remarks that Spinoza is continually striving after the concrete Universal, and against his will continually finding the abstract Universal. There may be a doubt as to the degree in which the last half of this statement holds good. In any case, however, the first half is true, and this it is which constitutes the whole interest and value of Spinoza's philosophy. Professor Fullerton seems utterly blind to this predominant tendency which constitutes the essence of Spinoza's living and thinking. The impression he is sure to leave on the reader who trusts to his guidance is that Spinoza is through and through penetrated by the worst form of scholastic realism. Where Spinoza refers to the concrete whole as constituting the existence and nature of its parts, Professor Fullerton interprets him as meaning that an hypostatised general concept constitutes the reality of the particulars which fall under it. The truth is that Spinoza denied the reality both of the abstract Particular and of the abstract Universal, and that he struggled, as far as in him lay, to maintain this point of view both in theory and practice. In so far as he failed, it was, as Principal Caird says, against his will. Professor Fullerton in his annotations points out with great care and with his well-known acuteness many fallacies in the formal reasoning of the *Ethic*. Students of Formal Logic may consult this part of his work with advantage. But we should have thought that, from the point of view of Philosophy and History of Philosophy, the formal correctness or incorrectness of Spinoza's demonstrations could, at the present day, be of interest to no mortal.

The second edition of Mr White and Miss Stirling's well-known translation of the *Ethic* derives its main interest from the new Preface. This Preface deserves very high praise. It exhibits what we may call the soul of Spinoza's doctrine in the most stimulating and attractive manner. All who are, or wish to be, interested in Spinoza's system ought to read Mr White's hundred pages of Introduction. G. F. S.

*Comte, Mill and Spencer.* By JOHN WATSON, LL.D., Professor of Moral Philosophy in the University of Queen's College, Kingston, Canada. Glasgow: James Maclehose & Sons. New York: Macmillan & Co., 1895. Pp. xx., 302.

Further notice of this little book will follow in due course. The ensuing quotation from the Preface will show its scope and aim. "The

general proof of Idealism must consist in showing that, while the determination of Reality by such categories as coëxistence, succession, and causality, is capable of vindication so long as it is not regarded as ultimate, it becomes false when affirmed to be final, and that we are compelled at last to characterise existence as purposive and rational. There are various ways of enforcing this view. The method which I have followed here is to attempt to show that the ideas which lie at the basis of Mathematics, Physics, Biology, Psychology and Ethics, Religion and Art, are related to each other as developing forms or phases of one idea—the idea of self-conscious Reason. But, partly out of respect for their eminence, and partly as a means of orientation both for myself and for the students under my charge (for whom this **Outline** was originally prepared), I have examined certain views of Comte, Mill, and Spencer—and also, I may add, of Darwin and Kant—which appear to me inadequate."

*Imagination in Dreams, and their Study.* By FREDERICK GREENWOOD. London: John Lane; New York: Macmillan & Co., 1894. Pp. ix., 198.

The two chapters of this little book are expanded from articles published by the author in the *Contemporary* and the *New Review*. Both are delightful reading: and to subject the accomplished writer of the *Lover's Lexicon* to the grim test of scientific criticism suggests somewhat unpleasantly the breaking of a butterfly on a wheel. Still, if facts are to be stated, it must be urged that such sentiments as these:—'[There is] an inveterate reluctance to allow that dreams are operations of the mind'; 'To treat of dreams as a matter of serious consideration is to hazard the suspicion of being a dreamer oneself'; 'The superstitious fear of being drawn into superstition...has long been the most inveterate stumbling-block in the way of a boldly reasonable theory of dreams'; 'It has been decided by the scientific that dreams are entirely profitless'; 'The inquiry is almost invariably approached either in the spirit of the old superstition or in the new spirit of materialism and mockery'—betray a lamentable ignorance of psychophysical dream-literature: that the picture of 'will slumbering, attention dormant, while imagination wakes to revel in perfect freedom,' taken as a literal representation of a state of consciousness, belongs to the psychology of Wolff, and not to that of our own day: that theories of wave-communication and soul-liberation do not belong to the domain of science: and that the literary presentment of the dream-experiences of 'Mr A.' is not scientific evidence.

Mr Greenwood's account of his own experience, on the other hand, is valuable. His record must be classed with those of Johannes Müller, Maury, Ladd and others. Still more valuable would be the results of a cross-examination of the author by a psychologist trained to distinguish between the various forms and projection-modes of visual images.

E. B. T.

*Symbolic Logic.* By JOHN VENN, Sc.D., F.R.S., Fellow, and Lecturer in the Moral Sciences, Gonville and Caius College, Cambridge. Second Edition, revised and rewritten. London: Macmillan & Co., 1894. Pp. xxxviii., 527.

The following is an extract from the Preface to this Second Edition. "The whole work has been carefully revised and rewritten, not a single page having been left unaltered. These alterations consist partly in

condensation of explanation: partly in a fuller discussion of certain topics; such as particular propositions, and the intensive and propositional interpretation of our symbols. The chapter on Hypotheticals has been considerably modified, and the Historical notes in the final chapter much added to. Altogether there is a net addition of nearly a hundred pages. No fundamental alterations have been introduced."

*Popular Science Lectures.* By E. Mach. Translated by T. J. McCormack. Chicago: The Open Court Publishing Co., 1895.

The twelve lectures contained in this volume, and covering the period from 1864 to 1894, have been here brought together for the first time. Most of them will be familiar, in their original German dress, to epistemologists and experimental psychologists: while the remainder, which deal with physical questions, are well worth reading.

The translation is accurate and clear, but far too photographic to be elegant.

*Logic.* By Dr Christoph Sigwart, Doctor of Philosophy at the University of Tübingen. Second edition, revised and enlarged. Translated by Helen Dendy. London: Sonnenschein & Co., 1895. 2 vols., pp. xii., 391, and viii., 584.

This is an authorised translation, which the author has indeed revised with singular care. As is well known to students, the first volume deals with Logic in general, the second with technical logical methods. Review will follow.

*Le Transformisme social.* Essai sur le progrès et le regrès des sociétés. Par G. De Greef, Professeur à la Nouvelle Université libre de Bruxelles. Bibliothèque de Philosophie contemporaine. Paris: Félix Alcan, 1895. Pp. 518.

M. de Greef studies the problems relating to the progress and decadence of societies from two points of view. In the first place he examines these problems from the standpoint of collective psychology: and in the second place from the standpoint of social institutions. He does not pretend that his examination of the question unlocks the secret of social progress or social decay. He is rather concerned with pointing out the difficulties of such a task and the impossibility of accomplishing it in the present stage of human knowledge. At the same time he ventures to indicate some of the methods which must be followed in order to arrive at scientific, as distinguished from sentimental and metaphysical, conclusions on the subject of social progress or decay. The first half of M. de Greef's volume contains an exposition of the development of the idea of progress. This order of procedure is justified on the ground that the history of a social idea is the most effective means of understanding its contents. The evolution of the idea of progress is likewise one of the aspects of progress, inasmuch as beliefs and doctrines are an integral part of social life. Our ideas and beliefs stand in the closest possible relation to the social organisation of which we constitute a part. They afford some sort of index of progress itself. Institutions are the external embodiment of ideas and an examination of social institutions forms the second portion of M. de Greef's volume. His inquiry into social processes leads him to several conclusions, of which the following are the most important. There

is an intimate co-relation between collective beliefs and collective life. In periods of social crisis and social decay pessimistic theories get the upper hand ; in periods of progressive development optimist beliefs and theories predominate. In proportion as civilization becomes more vast and harmonious, in the same proportion do optimistic beliefs tend to prevail. Social rearrangements become more difficult as society advances in complexity of structure, and the more highly organised a society is the more difficult it becomes for decay to attack it. At no period in the history of mankind has civilization been so vast and so complex as it is at present. Its organs of co-ordination have never been so perfected. The progressive life of the social organism is therefore better assured than in any preceding period of human history. We may possess our souls in courage and confidence. But courage above all is required in order to eliminate the factors of decay which have succeeded in disorganising the most brilliant and powerful societies of antiquity. It is also needed in order to grapple with the most terrible and irresistible of these factors,—economic inequality. M. de Greef has written a thoughtful and stimulating book. If we may venture on a criticism of a general character it will be to say that he looks at the evolution of society too exclusively through the spectacles of biology. W. D. M.

*La Cité Moderne.* Métaphysique de la Sociologie. Par JEAN IZOULET, Professeur agrégé de philosophie au lycée Condorcet. Bibliothèque de Philosophie Contemporaine. Paris: Félix Alcan, 1895. Pp. 691.

According to M. Izoulet we have a key to the riddle of the universe and all that it contains in one word—Association. It is said that union is strength ; it is more, it is creation. Absolute isolation reduces existence to a minimum, complete and harmonious association raises it to a maximum. The lower down we go in the scale of life the smaller is the amount of association : the higher we ascend the more ramified and complex association becomes. This is not merely a biological but also a sociological and a cosmological law. In biology the law of association explains the evolution of animal life on the earth ; it explains the constitution of innumerable species of fauna and the gradual ascent of existence from lower to higher forms. In sociology association explains the evolution of humanity in prehistoric times ; it explains the laborious journey of mankind from savagery to civilization since the dawn of history. In other words, association affords an adequate explanation of the genesis and development of individual and collective life. Finally, in the domain of cosmology association permits us to glance at the secret operations of the Universal being. Everywhere it shows us a principle of order, of combination, of co-ordination, co-operation, and synthesis ; a principle of concentration and centralisation, a principle of government ; in short a principle of unity in which multiplicity is absorbed and condensed. Leibnitz performed a service to science and humanity by pointing out that the individual is the beginning and the end. Everything originates in the individual and everything ought to end in him. But association is the means by which the end must be attained. This is the fundamental truth which the modern mind and conscience must absorb and assimilate before the modern city can be established on a durable foundation. Hitherto the Western races have failed in their efforts to establish a lasting form of civic structure. In the past they have failed in consequence of the disintegrating action of mysticism and cynicism. The mystic has forsaken civic duties, the cynic has despised them. A new danger has arisen to civic life in the shape of a growing antagonism between the classes and the

masses. Hitherto the classes have succeeded in evicting the multitude; henceforth the many may accomplish the ostracism of the few—we are possibly entering on an era of reprisals. Civilization is in danger of being submerged by an influx of barbarism from below. How is this peril to be averted? How is equilibrium to be established between the few and the many? This is the absorbing problem of the present day. How is it to be solved? According to M. Izoulet it can only be solved by an enunciation of the principle that association is the cardinal law of vital, social, and cosmic development, and that individual well being can only be attained by the fullest recognition of this law in every department of life and by unswerving loyalty to it. W. D. M.

*Théorie Psychologique de l'Espace.* Par CHARLES DUNAN, Professeur de philosophie au Collège Stanislas. Paris: Félix Alcan, 1895. Pp. 164.

The object of this book is to attack the ordinary view of the psychology of space according to which our idea of it is derived from sensations of touch, of locomotion, or of muscular tension, and to show that, on the contrary, for men endowed with sight, space is of purely visual origin. The space of the born-blind and that of the seeing are the same only in so far as the intelligible relations within them are the same, or, as it is otherwise expressed, the law which constitutes them. Dunan opposes his theory to that of English Empiricism, entering into a detailed criticism of the views of Berkeley, Stuart Mill, Spencer and Bain with regard to the psychology of space; but he distinguishes his view also from the nativistic or *a priori* theories of Kant and his recent French exponent Renouvier. Though dependent upon the visual or tactual organ, space is *a priori* in the sense that it is "constructed" by us as we perceive it, the construction and perception being distinct but inseparable acts. The former however is timeless, constituting space a unity, a whole, a real form, while the latter is in time bringing the parts of space gradually into our knowledge. Justice is thus done to each of the opposing theories.

A distinction is also drawn between the perception and the measurement of space, the latter being a process which requires the association of repeated experiences. Originally space is perceived by a "*vision ignorante*," the *meaning* of what is seen remaining unknown until interpreted by experience, *i.e.* experience of movement. Movement is the fundamental fact of nature, and the visible is interpreted in its terms, but it is 'seen' not tactually perceived movements that are meant. Tactual sensations with us recall the visual, not *vice versa* as the empirical theory demands. A felt distance is transposed into its visual correspondent.

The part which the sensation of movement plays in M. Dunan's theory is not quite clear (p. 24 ff.). He denies that the movement of translation is an element in our perception of space; on the other hand he suggests that this may be the case with movement '*sur place*,' or organic movement, *e.g.* expansion and contraction in the case of the eye. Space is not perceived by the resting organ, which would be entirely passive; through its organic movement however it is active, and the perception of space comes to depend upon the organ itself. The superior advantages of an organic movement in this respect are not quite evident; but the reason for M. Dunan's view appears to lie in a metaphysical conception of space as "dynamic and living, or rather it is life itself, unfolding itself in its unity and infinite variety" (p. 129). Movement implies force, otherwise the fact of movement would be inexplicable (its continuity), and force seems to be expressed rather in organic movement

than in movement of translation; why, it is difficult to say; the one appears analysable into the other. If space is not perceived by the eye independently of its movement, it will not be brought to perception *through* the movement. M. Dunan supplies his own correction; space in its identical nature is perceived by the eye as (relatively) resting, but its parts are successively brought into view by the moving eye.

There is a curious absence of all reference to recent theories of extensity, passiveness, &c. as a common element in sensations. Probably M. Dunan would reject them; he holds that the data of different senses have nothing in common with one another, except the intelligible relations between their elements. So the tactual space of the blind man has with our visual nothing in common but the relations expressed by each, as the same thought is expressed in different languages which have no other relation to one another.

There are in Ch. v. some interesting observations on the blind, and the nature of their space-form, reprinted from the *Revue Philosophique*, Avril, 1888.

J. L. McIntyre.

*Pages choisies de J. M. Guyau.* Par M. Alfred Fouillée. Paris: A. Colin et Cie. Pp. xvi., 338.

This volume forms part of a collection of "Choice Pages from great French Authors,"—a series in which J. J. Rousseau, Michelet, Renan, and others have already appeared. The name of Guyau has in France already won for itself the distinguished position in public esteem which it deserves. M. Guyau has given expression to the doubts and beliefs, the sorrows and hopes, in a word, all the moral and social aspirations of the present time, with a sincerity which is not to be found in any other contemporary French philosopher or moralist. To none of them belongs such a treasure of great thoughts 'that come from the heart.' Depth of feeling, brilliancy, and charm of style give these great thoughts a fitting embodiment. Many of the selections in this book, *e.g.* 'The Ocean,' 'The Destiny of Man and of the World,' 'Generosity and Charity,' are universally admired, and will have an abiding place among the choicest literature of the French language. Besides this, Guyau is one of those whom to read is to love; for he was himself a lover of things great and good, and to them he consecrated his entire life.

M. Alfred Fouillée gives extensive extracts, which read consecutively under these four heads: (1) Art and Literature, (2) Morals and Education, (3) Philosophy and Religion, (4) Poetry. He thus places within everyone's reach in its most interesting aspects the work of the philosopher-poet, who died at the early age of 33 years, but whose fame and moral influence are continually on the increase both in France and other countries. (Communicated by M. Fouillée.)

*Die Logik John Locke's.* Von Dr Ed. Martinak, Professor am II. Staatsgymnasium in Graz. Halle a. S.: Max Niemeyer, 1894. London: Williams and Norgate. Pp. v., 148.

This book is written on the same lines as Meinong's *Humische Studien.* It is decidedly inferior in importance to Meinong's work, but it has a similar kind of interest and value. The author gives a sympathetic and painstaking exposition of Locke's epistemological doctrines; and this exposition is accompanied by a criticism which is in a high degree genial

and helpful. Dr Martinak endeavours throughout to elicit by a process of careful sifting the germs and suggestions of valuable truth which are hidden by Locke's frequent looseness of thought and expression. Besides this, he often himself introduces an independent discussion of the many interesting issues which emerge. He treats his subject under three heads: (1) The doctrine of Ideas; (2) The doctrine of Judgment (*Urteil*); (3) The doctrine of Method. Under the first head the classification of the content of cognitive consciousness into simple Ideas, and Ideas of substances, modes, and relations, is fully discussed. The ambiguity of Locke's use of the word 'real' as applied to Ideas is pointed out, simple Ideas and Ideas of substances being real in so far as they conform to an archetype; whereas Ideas of fixed modes and relations are real because they are themselves archetypes. The difficulties which beset Locke's view on this point are clearly and acutely brought out.

The most interesting part of Dr Martinak's work is concerned with Locke's account of Judgment, or, to use his own language, of Propositions. Locke says that a Proposition consists in the joining or separating of signs. A mental, as distinguished from a verbal, Proposition is the joining or separating of Ideas, which are signs of objects. Dr Martinak shows that Locke simply meant by this joining and separation, the affirmation or denial of a connexion between Ideas; and that he regarded affirmation and denial as an ultimate and irreducible mode of being conscious. "This action of the mind, which is so familiar to every thinking and reasoning man, is easier to be conceived by reflecting on what passes in us when we affirm or deny, than to be explained in words." In this deliverance Dr Martinak finds an approach to Brentano's well-known doctrine of Judgment. Next follows a critical account of Locke's theory of Knowledge in the restricted sense of the word, as perception of agreement and disagreement between Ideas. Attention is of course drawn to the confusion involved in bringing knowledge of real existence under this head. What is most emphasized is Locke's clear recognition of the distinction between what Hume calls relations of Ideas, and matter of fact. It is implied, however, that Locke had not grasped this point so clearly as Hume. This we cannot admit; it constitutes the very essence of Locke's theory of Knowledge. Knowledge in the strict sense is for him the perception of relations which are founded in the intrinsic nature of the ideas related, and are therefore necessary and changeless, so long as the ideas themselves remain the same. Other relations, such as the co-existence of qualities in a substance, are simply found to exist as a matter of fact. They have not the internal necessity which is requisite to constitute the evidence on which knowledge is based. We are not sure that Dr Martinak has quite done justice to Locke here. At any rate, it is curious that, on p. 123, he classes together what Locke calls 'trifling Propositions' with Propositions expressing universal and necessary relations of ideas. For Locke, the two kinds of Propositions were as strongly contrasted as they well could be. His account of the 'trifling Propositions' agrees with Kant's account of the analytic judgment; but Locke sensibly enough refuses to admit that such Propositions, considered as merely analytical, can have any significance except as expressing the arbitrary connexion between a verbal sign and its meaning. The universality of such a Proposition lies merely in its grammatical expression, not in its import for knowledge. The perception of the agreement and disagreement of ideas is at once a synthetic and analytic process; and apart from the synthetic element in it, it would be insignificant. What would now be called Synthesis, Locke called Comparison. This does not of course touch the question of *a priori* judgments as to

matter of fact; and it is in the treatment of this point that Hume's originality consists.

Dr Martinak next proceeds to consider Locke's doctrine of the existential Judgment, and his fruitless struggle to get outside the charmed circle of Ideas to a knowledge of, or legitimate belief in, the existence of corresponding objects. It is urged that the spell would have been broken for Locke, had he known Brentano's doctrine of the nature of Judgment, and that this was what he was vainly seeking after, and what he here and there approximates to. The author avails himself of the opportunity to defend Brentano's view and criticise counter theories. The whole discussion is highly interesting and instructive, both in itself and in its bearing on Locke. G. F. S.

*Humes und Berkeleys Philosophie der Mathematik.* Von Dr Eugen Meyer. Halle a. S.: Max Niemeyer, 1894. London: Williams and Norgate. Pp. 57.

Dr Meyer compares Hume's view of mathematical knowledge with that of Berkeley, and the later doctrine of Hume as presented in the *Essay* with the earlier as presented in the *Treatise*. The most vital point of difference between Hume and Berkeley is traced to their divergence in regard to the relation of visible to tangible extension. For Berkeley the visual image is merely a sign of the tangible reality; whereas for Hume extension is essentially something presented to the eye. Dr Meyer enters into a polemic against Meinong's interpretation of Berkeley's doctrine of general concepts. His main point seems to be that Meinong wrongly ascribes to Berkeley a doctrine of general ideas, whereas the true Berkleian view was that generality belongs only to verbal signs and to geometrical diagrams considered as natural signs of tangible extension. It seems clear that Meinong is here right and Dr Meyer wrong. He is certainly wrong if he supposes, as his language would seem to indicate, that no particular images, other than geometrical diagrams, can, according to Berkeley, have a general signification as types of a class. At the same time Berkeley regarded the associative power of words as necessary to endow particular ideas with this universal significance; and he also held that words by themselves, like algebraic symbols, through their pre-acquired connexion with each other, may and do constitute an instrument of general thinking without calling up associated ideas. As regards the connexion between the *Treatise* and the *Essay*, Dr Meyer maintains that there is a marked inconsistency between Hume's earlier and later view of Mathematics. Doubtless there is some inconsistency; but we are inclined to think that Dr Meyer and others exaggerate it. In both *Treatise* and *Essay*, Hume admits the *a priori* necessity of Arithmetic and Algebra. In the *Treatise* he points out that there are certain empirical elements in Geometrical science which involve inexactness and uncertainty in certain points of Geometrical doctrine, but he none the less leaves a large field within which Geometrical knowledge has *a priori* necessity; especially if we regard it merely as an ideal construction, and not in its physical application. The point which Hume seems to have most at heart in the *Treatise*, the analysis of extension into a plurality of indivisible points, rather favours the *a priori* necessity of Geometry, in so far as it is concerned with relations of ideas; for the conception of exact equality becomes, on this view, ideally reducible to the conception of a numerical equation. When, therefore, Hume says in his *Essay* that "though there never were a circle or triangle in nature, the truths demonstrated by

Euclid would for ever retain their certainty and their evidence," his statement, judged by the standpoint of the earlier work, appears rather loose and exaggerated than fundamentally contradictory. G. F. S.

*Entwurf einer ontologischen Begründung des Seinsollenden.* Von Gustav Engel. Berlin: Wilhelm Hertz, 1894. Pp. vi., 212.

This book strikes one as somewhat of an anachronism. Its method is that of the Hegelian Dialectic as Hegel himself conceived it. Now the work which Hegel did in his *Logic* is well worth doing over again with close reference to his results; but we venture that, to be done effectually, it must be done by some one who has freed himself from the trick of the Dialectic. Dr Engel's work might be said by a hostile critic to have about the same kind of value in relation to Hegel, as a tolerable copy of Latin verses has in relation to Horace or Vergil. The leading steps in the dialectic process are Abstract Being, Becoming, Number and Quality, Time, Space, Spatial Movement, Sensation, the Concept as expressed in language, the Fine Arts, Self-Love and Altruism, the Purpose of Life and the means of fulfilling it, the Empirical attitude, Religion, and Philosophy. There are some interesting and suggestive remarks scattered up and down the book, and in particular, when the author takes occasion to refer to Music, the subject in which he is a specialist, he is well worthy of attention.

*Das Verhältnis der Philosophie zu der empirischen Wissenschaft von der Natur.* Von David Wetterhan. Leipzig: Wilhelm Engelmann, 1894. London: Williams & Norgate. Pp. vi., 110.

The author vindicates from a Kantian point of view the importance of Philosophy to Science, as fixing in general outline its scope and content. His Kantianism is of the stamp of F. Lange's, or Riehl's. He discusses a number of general philosophical questions in an interesting way,—such as the law of the Conservation of Energy in relation to Psychical Functions, Purposive Adaptation in nature, Critical Idealism and the Physiology of the Sense Organs, and the Free-will question. The author's general position is that the function of Philosophy is to unify Science, and this, he holds, can only be done on Kantian lines. It is perhaps worth mentioning that Mr Wetterhan regards psychical states as factors operative in psychical process, and yet thinks to preserve the unity and continuity of psychical change by supposing that *quantity* of energy is not augmented or decreased by psychical conditions, its *form* only being changed. Such a distinction is not likely to help either Philosophy or Science. If conscious states can control the transformation of energy there is no reason why they should not produce it; if they are allowed to operate at all, the mode of their operation can only be ascertained by special experiment, not by general considerations.

*Psychologisch-ethische Untersuchungen zur Werth-Theorie.* Von Alexius Meinong. Graz: Leuschner & Lubensky, K. K. Universitäts-Buchhandlung, 1894. Pp. x., 232.

This book has been written under the influence, on the one hand, of the psychologist Brentano, and, on the other hand, of the Austrian school of Economists. It is an attempt to discuss the theory of value along the lines pursued by the Austrian writers, but regarded from the point of view of psychology and ethics, rather than from that of political economy.

It thus bears a close resemblance to the treatment of the same subject previously given by Ehrenfels in a series of articles contributed to the *Vierteljahrsschrift für wissenschaftliche Philosophie* for 1893 and 1894. The work of Meinong strikes me, however, as being more careful and systematic than that of Ehrenfels. It is, at any rate, painted on a somewhat larger canvas. On the whole I am disposed to regard it as the most luminous and suggestive discussion of the whole subject of Value that I have yet seen. It is divided into two main divisions, the first dealing with Value in general, the second more particularly with moral (or rather ethical) Value. The former of these two parts falls into three chapters :— I. The Idea of Value, discussing the general relation of the problem to psychology, the distinction between Value in the wider sense and purely economic Value, the relation between Value, Want, and Utility, the Feeling of Value in relation to Pleasure and to Judgment, and some kindred topics ; II. On Feelings of Judgment, a general discussion of the relation between Feeling and Judgment, with special reference to the Judgment of Value ; III. Subjective and Objective Value ( *Werthhaltung und Werth*)—or, as we might perhaps translate it, Esteem and Value. The latter of the two parts falls into four chapters :—I. The Object of Moral Value ; II. The Subject of Moral Value ; III. On the moral "Ought"; IV. On Responsibility and Freedom. There are also some Concluding Remarks on the Sphere of Ethics and on the Problems of Ethics as Theory of Value. The treatment is to some extent mathematical, especially in Part II., Chap. I. A detailed account and examination of the ideas set forth must be reserved for a future opportunity.

J. S. M.

---

Received also :—

A. Balfour, *Foundations of Belief*, London, Longmans, Green & Co., 1895, pp. viii., 356.

B. Bosanquet, *A Companion to Plato's Republic*, London, Rivington, Percival & Co., 1895, pp. xii., 430.

H. Maudsley, *The Pathology of Mind*, London, Macmillan & Co., 1895, pp. xi., 571.

A. J. Bell, *Whence comes Man?*, London, Isbister & Co., 1895, pp. vii., 241.

A. J. Bell, *Why does Man exist?*, London, Isbister & Co., 1895, pp. viii., 349.

H. Sutherland, *The Difficulties of Prognosis in Insanity*, London, John Bale & Sons, 1894, pp. 31.

G. T. Ladd, *Primer of Psychology*, London, Longmans, Green & Co., 1894, pp. ix., 224.

H. C. Burdett, *Helps in Sickness and to Health*, London, The Scientific Press, 1894, pp. xv., 471.

W. Donisthorpe, *Law in a Free State*, London, Macmillan & Co., 1895, pp. ix., 312.

T. Ziehen, *Introduction to Physiological Psychology*, translated by C. C. Van Liew and O. W. Beyer, London, Swan Sonnenschein & Co., 1895, pp. ix., 305.

G. T. Ladd, *Philosophy of Mind*, London, Longmans, Green & Co., 1895, pp. x., 412.

H. Jones, *The Philosophy of Lotze*, Glasgow, James Maclehose & Sons, 1895, pp. xiv., 375.

L. Dugas, *L'Amitié Antique*, Paris, Félix Alcan, 1894, pp. 454.

J. Crépieux-Jamin, *L'Écriture et le Caractère*, Troisième Édition, Paris, Félix Alcan, 1895, pp. viii., 423.

R. Allier, *La Philosophie d'Ernest Renan*, Paris, Félix Alcan, 1895, pp. iv., 181.

M. Pilo, *La Psychologie du Beau et de l'Art* (traduit de l'Italien par A. Dietrich), Paris, Félix Alcan, 1895, pp. 177.

H. Kleffer, *Science et Conscience*, Tome III, Paris, Félix Alcan, 1895, pp. 389.

E. Pfannkuche, *Socialpolitische Schriften von T. Carlyle* (aus dem Englischen übersetzt), mit einer Einleitung und Anmerkungen herausgegeben von Dr P. Kensel, Bd. I., Göttingen, Vandenhöck & Ruprecht, 1895, London, Williams & Norgate, pp. 214.

K. Busse, *Herbert Spencers Philosophie der Geschichte*, Leipzig, Gustav Fock, 1894, pp. 114.

C. Baeumker, *Beiträge zur Geschichte der Philosophie des Mittelalters*, Texte und Untersuchungen, Bd. I., Heft IV., Münster, 1895, London, Williams & Norgate, pp. xxii., 553.

L. Busse, *Philosophie und Erkenntnistheorie*, Erste Abteilung, Leipzig, S. Hirzel, 1894, London, Williams & Norgate, pp. vi., 289.

K. C. F. Krause, *Abhandlungen und Einzelsätze über Erziehung und Unterricht*, Berlin, Emil Felber, 1894, London, Williams & Norgate, 2 Bände, Bd. I., pp. viii., 162, Bd. II., pp. 104.

G. Ulrich, *Verdienst und Grade* oder *Über die Motive des Handelns*, Berlin, H. Heyfelder, 1895, London, Williams & Norgate, pp. 94.

A. S. y Mata, *Origen Poliédrico de las Especies*, Madrid, Establecimiento Tipográfico, 1894, London, Williams & Norgate, pp. 84.

## XI.—PHILOSOPHICAL PERIODICALS.

Critical Review. The Articles in the January Number are mainly theological. There are however four which deal directly with philosophical problems. There is an article by **Mr Wenley** on Illingworth's *Personality*, two by **Professor Iverach**, one on Wundt's *Human and Animal Psychology* and one on Hughes' *The Theory of Inference*, and an article by **Mr Alexander Martin** on Seth's *A Study of Ethical principles*. **Mr Wenley** first gives an analysis of Illingworth's Bampton Lecture, and does full justice to its merit. He finds however that "the ontological aspect of the question, which after all is the fundamental one, has been too little emphasised, and at the present juncture, especially in a work likely to be widely read, this is to be regretted." The subsequent part of his article is an attempt to supply the lacking element. Mr Wenley's view, too briefly set forth, is that personality "furnishes the very ground of our judgment of reality, and so far from being limited, rather affords the sole standard, whereby a being constituted like man, can in any degree measure infinity." The remarks of Mr Wenley lead us to hope that he will return to the subject and work out his view in an adequate manner. **Professor Iverach** deals with Wundt's Lectures and looks at the translation of them as a sign of the increased interest taken in psychological questions. Having given a description of Wundt's aim, methods, and results, he takes exception to Wundt's explanation of the connection between the mental and physical processes, regards Wundt's attempt at a description of the genesis of the "Self," of its character and function, as unsatisfactory, and questions the use which is made of Weber's law, as modified and generalised by Fechner, and applied by Wundt. He quotes Boune to show that Weber's law taken absolutely is meaningless, and he quotes James of Harvard to show that the law is physiological. The notice of Hughes' Theory of Inference characterises that book as important and suggestive. **Mr Martin's** notice of Seth's Ethical principles, shows us how well Mr Martin is equipped for ethical study, and how much might be done by him if he gave himself to it. He is both just and generous in his appreciation of Seth's work. The strongest part of the notice is where he lays his finger on a defect in Seth's treatment of the subject. "A deeper analysis of the Conception of Personality would appear to be called for here. The formula in question can only supply the place of an ethical *principle*, from which the particular obligations of the good life may be seen to spring, when it is interpreted of such a Self as is nothing, and can 'realise' nothing except in and through the network of relations it sustains to other personalities like itself, and one would add, to that Supreme Personality which is at once the law, the strength, and the end of the moral life of all of them."

PSYCHOLOGICAL REVIEW. Vol. I., No. 6. **J. Dewey.** 'The Theory of Emotion.' I. [An attempt to harmonise the Lange-James theory with Darwin's account of emotional 'expression.' All the bodily changes are either teleological adjustments or disturbances and alienations of such adjustments. They cannot be regarded, therefore, as the expression of a pre-existent emotion. Though obscurely expressed in many places, the article brings up several important points in a suggestive way.] **C. L. Dana.** 'The Study of a Case of Amnesia or "Double Consciousness."' [Clinical report. Case explained tentatively by inhibition of some special functions of the nerve cells implicated.] **J. H. Hyslop.** 'Experiments in Space Perception.' II. [Tentative conclusion: (1) Apparent magnitude is not determined by retinal magnitude, but by a certain relation between this and the fixation-point or degree of convergence; (2) Localisation depends much more on fusion than upon muscular tension of the eyes, *i.e.*, the functions of space perception are central.—Before the work can be evaluated, it must be brought into connection with the rest of the recent literature. The writer leaves this entirely to the reader.] **E. A. Kirkpatrick.** 'An Experimental Study of Memory.' [Rough work with school-children; pædagogically suggestive.] Discussion: **J. M. Baldwin.** 'The Origin of Emotional Expression.' [In its origin, emotion is a central phenomenon of pleasure and pain, though at the present stage of development it is constituted mainly by the return-wave from the periphery of reactions that have become habitual. While wrong from the point of view of origin, the Lange-James theory, in its amended form, holds for the developed consciousness. An interesting and clearly reasoned paper, reaching a somewhat paradoxical conclusion.] Psychological Literature. Notes.

Vol. II., No. 1. **C. Stumpf.** 'Hermann von Helmholtz and the New Psychology.' [Brief appreciation of Helmholtz' work in physiological psychology.] **J. Dewey.** 'The Theory of Emotion (II.)' [In emotion the mode of behaviour is the primary thing, and constitutes the emotional seizure or *Affect*, and the object, at one and the same time. We do not have, *e.g.*, the idea of the bear as something to be escaped, and so run away. We run instinctively, and so get the idea of bear-as-something-to-be-run-from, frightful-bear, or (what comes to the same thing) how-frightened-I-am. Though this position is maintained through the greater part of the article, a somewhat different statement is made at the end, as the conclusion of the whole.] **M. A. Starr.** 'The Muscular Sense and its Location in the Brain Cortex.' [The centres are distinct from touch, pain, or temperature sense-centres, and from motor centres. They lie just behind the motor area in the parietal region.] **G. W. Fitz.** 'A Location Reaction Apparatus.' Discussions: **P. Shorey.** 'Mind and Body.' [A somewhat superficial examination of Wundt's recent article *Ueber psychische Causalität, etc.*] **H. M. Stanley.** 'Attention as intensifying Sensation.' [Discussion of Münsterberg's recent study of the topic. Unimportant.] **H. R. Marshall.** 'Pleasure-pain and Emotion.' [Answer to Santayana's review of the writer's recent book on the subject.] **E. B. Titchener.** 'A Comment.' [Note on James' treatment of Wundt's doctrine of the apperception-process and its attendant phenomena.] Psychological Literature. Notes.

PHILOSOPHICAL REVIEW. Vol. IV., No. 1. **S. W. Dyde.** 'Evolution and Development.' [Evolution is the key-note of biology; development is said by many to be the key-note of psychology. It may be well to ask in a few typical cases what the evolution-philosophy has done for us. (1) The concept of the social organism has widened. "Dissatisfaction with and revolt against the idea that the state is going comfortably forward...are

cardinal elements in the conception of the development of society." (2) Evolution asserts advance from higher to lower types. This has radically changed the conception of history. (Parenthesis on 'conscious contact with previous thought' in its relation to progress.) (3) The individual life epitomises the racial. This implies that mind should be ordered not into faculties, but into an ascending scale of apprehensions of reality; and that the simplest psychoses are not the nearest to reality.] **S. E. Mezes.** 'Pleasure and Pain defined.' [A psychic fact attended to is pleasant or not according as there is or is not a discernible inhibition in the apperceptive system into which it is received. This is a very similar position to that of Dr J. Ward.—Pain is unpleasant sensation of abnormal intensity: if attention and felt inhibition are absent the state is indifferent: mixed feelings are possible.] **S. H. Mellone.** 'The Method of Idealist Ethics.' [(1) Ethics as dealing with the ultimate ideal of life is part of Ontology. Its problem is twofold: how to define the End, and how to get the meaning of the statement that 'this *is* the end.' Definition, without exposition of the sense in which we can affirm the reality of the defined, is not enough. (2) The Ethics of Conduct is not a science, but a body of doctrines bearing on practice. It assumes the End, and looks to Sociology and Psychology for help in its realisation.] **E. B. Titchener.** 'Affective Memory.' [Critique of Ribot's *Recherches sur la mémoire affective.* It is impossible to attend to pleasantness-unpleasantness as such, voluntarily to recall a past affective state as such, and to experience the spontaneous revival of it. Even if an affective state were reproducible, it would not be recognisable.] Reviews of Books. Summaries of Articles. Notices of New Books. Notes.

Educational Review. Sept.—Dec. 1894. Vol. VIII. 2, 3, 4, 5. *The unity of educational reform.* **C. W. Eliot.** [Enforces the promotion of individual instruction, careful training of organs of sense, practice in grouping and comparison of different sensations and contacts—with accurate written records thereof, memory-training, training in power of expression, in logical setting forth of a process of reasoning, and lastly, the holding fast of noble ideals.] *Illiteracy in the United States.* **T. H. Blodgett.** [The greatest relative progress is by the coloured population.] *A study of the Mathematical Consciousness.* **Mary W. Calkins.** [Includes a few interesting tables comparing algebraists and geometricians, men and women. "The figures are evidently too few to lead to demonstrated conclusions."] *The educational value of play...* **T. L. Hughes.** [Character-power grows by self-activity.] *Friedrich Paulsen.* **A. W. Shaw.** [An outline of Paulsen's teaching. Good portrait.] *Professional and general education.* **F. A. Walker.** ["With a proper arrangement of subjects and with good teachers, it is entirely possible...to give...pupils...studies and exercises which will make them resolute, exact and strong," and "at least a moderate measure" of those "which will make them also broad and high and fine."] *Bashfulness in Children.* **J. Mark Baldwin.** ["Important hints at the history of societies, both human and animal, are afforded by the phenomena of bashfulness in children."] *A Scheme of Sociological Study.* **G. E. Vincent.** [Indicates propositions endorsed by general consensus of opinion, derives a sequence of studies pedagogically rational, and suggests readjustment of educational structure of to-day in accordance with the scheme proposed.] *Disappointing results of Science-teaching.* Discussion. **A. E. Dolbear.** [Those who have had the best available science-teaching do not shew the superiority claimed for it in insight, skill, tact, judgment, and affairs in general.]

Revue Philosophique. 19me année, Dec. 1894. **G. Ferrero.** 'Les conditions du progrès moral.' [M. Ferrero proposes to replace the *biological* theory of moral progress, which rests upon the disputable assumption of the heredity of moral tendencies, by what he describes as a *psychological* theory. "La morale" must be divided into "la morale sexuelle" and "la morale active." The first is here left aside as depending on laws of its own, and only the second, which covers all social relations and functions save the reproductive, is dealt with. Moral progress implies in ultimate analysis the idea of a growing repugnance to the infliction of pain on our fellow-beings. This repugnance arises from *sympathy*, and sympathy (1) is in inverse ratio to *interest*, and (2) varies according to *resemblance*. Further, progress depends upon the *law of comparison*, the presence of a higher standard by which existing institutions may be judged. Hence the tendency to a moral equilibrium of nations. The moral contradictions often observable in a people are due to the multiplicity of the laws determining progress, since these laws do not always operate together. No simple theory is adequate to explain so complex a phenomenon as moral progress.] **G. Le Bon.** 'Les bases psychologiques du dressage : Étude de psychologie comparée.' [The astonishing memory of a horse makes him singularly susceptible to training by association. It is association by contiguity that comes principally into play.] **Dr Tardieu.** 'Étude de psychologie professionnelle : Le médecin.' [Discusses the physical and mental qualifications for the profession of medicine.]

20me année, Jan. 1895. **J. Soury.** 'La vision mentale' (1re article, *avec fig.*). [A close and critical survey of recent progress in the knowledge of the visual organs and centres.] **L. Dauriac.** 'Psychologie du musicien. III. De l'intelligence musicale et de ses conditions subjectives.' [Discusses in particular the relation between an "ear" for music and an intelligent appreciation of it.] **A. Schinz.** 'Morale et déterminisme.' [The moral problem *par excellence* is the reconciliation of determinism, required by science, with the sense of moral obligation, undeniably present in man. Moral obligation must be taken as a manifestation of determinism,—and as containing two elements, the formal which is invariable (obligation properly so called) and the material which is variable (the moral law). From the confusion of these two elements arise the errors of the theory of moral innateness. The content of the moral law varies according to place, time, and even individual,—the only unity exhibited in history is a general progress in a certain constant and uniform direction, and this cannot be taken as resulting from a direct innateness. Neither the innate moral law (Kant), nor the moral sense (Hutcheson, Shaftesbury, etc.) can be accepted as criterion of right and wrong, of moral progress; for neither leaves room for the actual variations in moral judgment. It is in the nature of the intellect (l'intelligence) itself that the criterion must be looked for,—of the intellect conceived, with Kant, as synthetic reason. Several motives of action being presented, the intellect is impelled by its proper laws of synthesis to judge one better than another. The moral feeling does not differ qualitatively from intellection, is a prolongation or effect of it. Thus the moral notions are only special manifestations of the general laws of the intellect—etc.] *Revue Générale.* **Belot.** 'Science et pratique sociales d'après des publications récentes' (1re partie).

Feb. 1895. **E. Durkheim.** 'L'enseignement philosophique et l'agrégation de philosophie.' [The teaching of philosophy in the Lycées, which formerly owed its force and inspiration to Cousin and has been succeeded by "un dilettantisme anarchique," must be replaced by a teaching of philosophy more in accordance with modern requirements. M. Durkheim

recommends a solid training in psychology,—as also in methodology ; and that the teaching without advocating any special system should be such as to instil the scientific spirit.] **G. Tarde.** 'Criminalité et santé sociale.' [A reply to the papers of M. Durkheim in the Revue entitled *Règles de la méthode sociologique* ; and in particular to his paradox that crime is an essential factor in the social well-being.] **J. Soury.** 'La vision mentale' (fin). **Belot.** 'Science et pratique sociales d'après des publications récentes (2me et dernière partie). Analyses, etc.

The reviewer desires to express regret for a careless error in the last number of *Mind*, where it was stated that M. Ribot in his paper "Recherches sur la mémorie affective" had obtained his consensus of opinion by the circulation of printed questions,—the real fact being that M. Ribot made his interrogations personally and directly.

Revue de Métaphysique et de Morale. Troisième Année, 1. **A. Sabatier.** 'De l'Orientation de la Méthode en Évolutionisme.' [M. Sabatier's main point is that evolution logically excludes new and relatively independent points of departure. Whatever has been evolved must be traced back to earlier and simpler rudiments, and finally to its own potential existence. When the writer uses the word 'potential' we have not the least idea what he means. He does not seem to be aware of the special difficulty attaching to a psychological application of his theory. Before the sensation of 'red' existed, what can its rudiment or its potentiality have been?] **Louis Weber.** 'Remarques sur le Problème de l'Instinct.' [Curiously enough, M. Weber urges a doctrine exactly opposite to that of M. Sabatier. He holds that psychical evolution depends on variations which are spontaneously initiated, so that, though we can assign their necessary conditions, we can never assign their sufficient conditions. The sifting and systematising of such variations he accounts for, on Darwinian lines, by natural selection. He treats of the present state of Animal Psychology, noting its extreme vagueness and generality, and making valuable suggestions for its future development. The whole paper is interesting.] **Criton.** 'Troisième Dialogue Philosophique entre Eudoxe et Ariste.' [In this third Dialogue between Eudoxe and Ariste the conclusion which is reached is that no one can know himself otherwise than as a body, and that introspection is impossible. The argumentation is clever, but most readers will regard Ariste as rather a feeble representative of the doctrine assailed.] Discussions, etc.

Zeits. f. Psych. u. Phys. d. Sinnesorg. Bd. VII., Heft 5 und 6. **L. W. Stern.** 'Die Wahrnehmung von Bewegungen vermittelst des Auges.' [If we follow a moving object with the eyes, we do not have a uniformly persistent and continuously changing muscular contraction, correlated with a single sensation; but a large number of short separate jerks, regulated by perpetual voluntary impulses. Constituents of the total mental process are: the perception of after-image traces of resting objects in the environment of the moved; that of an optical image of the moved object, practically constant, but perpetually subject to small displacements; that of multifarious sensations from the eye-muscles; and the consciousness of perpetual voluntary impulses, regulating the movement of the eye.] **F. Hitschmann.** 'Ueber das Traumleben des Blinden.' [In ordinary dreaming, a very small part is played by sense-ideas, with the exception of the auditory ideas of the human voice. So with peripherally excited dreams: only sound-stimuli are important. Organic sensations are dreamed as such, not interpreted. The dreams of the blind are composed of vicarious

ideas (previously discussed by the author in the *Zeits.*), abstract ideas, ideas of form ('dreaming in verse'), and strongly toned presentations.] **L. W. Stern.** 'Die Wahrnehmung von Helligkeitsveränderungen: Nachtrag.' Litteraturbericht. Obituary Note on H. von Helmholtz. Bibliographie der psychophysischen Litteratur des Jahres 1893. [1324 numbers: not quite exhaustive.]

Bd. VIII., Heft 1 und 2. **J. von Kries.** 'Ueber die Natur gewisser mit den psychischen Vorgängen verknüpfter Gehirnzustände.' [A tentative but important article upon cerebral predispositions. Conscious processes are influenced by neural processes, which have no direct conscious correlates. These neural processes can be grouped together as connective predispositions (reading-off of a line of music in the key symbolised at its beginning), and as predispositions *sensu stricto* (*dispositive Einstellungen*). Attention involves both. The writer discusses the validity-consciousness of the judgment, the abstract idea, rhythm, etc.: as well as the nature of the predisposition which he uses to explain them, its laws, and rival hypotheses (unconscious mental states, etc.). Particularly interesting is the comparison of his *Einstellung* with Exner's *Hemmung* and *Bahnung*.] **C. du Bois-Reymond.** 'Ueber die latente Hypermetropie.' **A. Hofler.** 'Psychische Arbeit.' I. [Psychical work, like mechanical, is force × distance. We must take account of both factors: *e.g.*, the length of the column of figures added, and the force of the attention directed upon the addition.—There are two ways of determining the principal forms of psychical work, the historical and the systematic. The latter gives us Idea and Judgment, Feeling and Desire. At first sight, 2 and 4 are work, 1 and 3 not-work. But each must be examined for itself.] Litteraturbericht.

Archiv für systematische Philosophie.—Bd. I., Heft i. **E. Zeller.** 'Ueber Metaphysik als Erfahrungswissenschaft.' [A defence of constructive philosophy, and a schematic program of it. Its starting-point must be in empirical data.] **B. Erdmann.** 'Begriffsbestimmung der Beobachtung überhaupt.' [Observation is "attentive apperceptive Perception." The distinctive characteristic of scientific observation is that in its case the apperceptive groups have a conceptual structure, so that they evolve themselves in consciousness as a series of judgments.] **G. Simmel.** 'Ueber eine Beziehung der Selectionslehre zur Erkenntnistheorie.' [It has been urged against the Spencerian theory of the part played by natural selection as a condition of the evolution of our knowledge and a guarantee of its validity, that mere utility in the struggle for existence is no test of truth. Mr Simmel here cuts the Gordian knot by boldly affirming that in ultimate analysis all that the word 'truth' can mean for us is practical efficiency.] **K. Lasswitz.** 'Ueber psychophysische Energie und ihre Factoren.' [By psychophysical energy is meant "that part of the energy of a structure, change in which corresponds to change in the state of consciousness of this structure. If *de* stands for a positive or negative increment of psychophysical energy, *di* for a change in its intensity-factor (potential), then *de* will be the physical correlate of the total change in the state of consciousness; *di* will be the physical correlate of the change in sensation; and the capacity-factor *c* of the psychophysical is connected with these quantities by the equation $de = cdi + idc$, which, when *c* is constant, is reducible to $de = cdi$." Lasswitz suggests that the capacity-factor is the physical correlate of feeling.] **P. Natorp.** 'Grundlinien einer Theorie der Willensbildung' (1.).

Zeitschrift für Philosophie und philosophische Kritik. Band 105. Heft 2. **Ludwig Busse.** 'Zur Beurteilung des Utilitarismus.'

[Utilitarianism is in the right as against the purism of Kant when it accentuates the fact that whatever is good must be capable of being experienced and enjoyed. Its chief defect is its failure to distinguish ethical good as the unconditionally highest pleasure, from pleasure in general.] **R. Falckenburg.** 'Die Entwickelung der Lotzeschen Zeitlehre.' [Lotze's change of front on the question of the ideality of time must have struck most careful readers of his works. Professor Falckenburg here enters into a careful historical examination of the development of Lotze's views on this point. His general result is that Lotze consistently taught that time and change exist only for our subjective apprehension, in all his writings prior to the *Metaphysik* of 1879. He there admits the reality of change, but denies that of the time-form as a pre-condition of change. But this modification of his doctrine relates only to process in finite things. It appears from the abstract of his lectures on Philosophy of Religion 1878–79, that he still continued to regard the Absolute as being in its intrinsic nature superior to time conditions. Professor Falckenburg points out that the published notes of the lectures on Metaphysics represent lectures given in 1865. Here Geijer and Höffding are wrong in referring to them as evidence of Lotze's later views.] **J. Zahnfleisch.** 'Zur Kritik der Aristotelischen Metaphysik.' Recensionen, etc.

Philosophisches Jahrbuch, Bd. VIII. Heft 1. **Dr E. Rolfes.** 'Die vorgebliche Präexistenz des Geistes bei Aristoteles.' [In this paper, the writer maintains against Zeller that Aristotle does not admit the doctrine of the pre-existence of the soul. Plato does, as a consequence of his theory of cognition; but Aristotle has a quite different theory. He indeed admits that the intellectual soul, in contrast to the sensitive and vegetative life-principle, 'comes from without'; but these words do not necessarily imply pre-existence. He calls the mind 'eternal'; but the sense of the word may be only 'eternal after death.' He denies that the soul is generated or dissolved; but as he says *ἀγέννητος*, not *ἀγένητος*, this is evidently meant of the generation of form out of matter. (To be concluded.)] **Prof. Dr C. Gutberlet.** 'Ueber Messbarkeit psychischer Acte' (concluded). [The bare possibility of measuring psychical acts being admitted, there comes the practical question: How are they to be measured? The method of equal differences, which gradually adds to the stimulus-unit, until an impression is produced equal to the sensation to be measured, taking into account Weber's law (sufficiently correct, notwithstanding great deviations from it in the case of certain senses), is the easiest to understand and expound; though there are others, more exact, and employing more correct formulæ. Fechner's and Elsas' methods seem not to be quite sound mathematically. All these measurements are clearly of no value either from a physiological or from a psychological point of view.] **Jos. Nassen.** 'Ueber den platonischen Gottesbegriff' (concluded). [Plato decidedly admits one supreme God, but not the Trinity in anything like a Christian sense. His respect for the established religion leads him also to admit the existence of inferior deities, but they are merely spiritual existences, or 'dæmons,' with whom he identifies them in many passages. God's Providence is a doctrine that he states quite clearly. As to the question whether, according to him, the Godhead and the Substantial Idea of Goodness were one and the same, both inferences from his doctrines and quotations from his works point to contradictory conclusions. Plato's doctrines were all his life, it must be remembered, in a state of change and evolution. He seems at times to have come very near identifying the active God of his system with his ideal World of Types, but never to have quite succeeded.] **Dr Beda Adlhoch, O.S.B.** 'Der

Gottesbeweis des hl. Anselm.' [St Anselm's proof of God's existence, much esteemed by many of old, is now generally considered to be an Ontologistic fallacy. It is not. It is a psychological and historical proof, and is conclusive. We take the fact that the notion of God is that of the most perfect being possible. But if this did not imply that God really and truly exists, it would no longer be that of the most perfect being possible. The writer expounds this view with many extracts from Anselm, and sums up with a classification of Atheists: Agnostics, practical and theoretical; Monists, Sceptics, and rebellious Atheists, or Atheists of the will. (To be continued.)]

Vierteljahrsschrift für wissenschaftliche Philosophie. XIX. Jahrgang, Heft i. **R. Avenarius.** 'Bemerkungen zum Begriff des Gegenstandes der Psychologie.' (Artikel III.) [These articles of Avenarius, in their endeavour to move with slow precision, seem scarcely to succeed in moving at all. Certainly in the present one there is no advance upon the previous position,—that the psychical is not a particular kind of experience, but experience in general considered from a certain point of view, *viz.* as dependent upon "definite changes in the system *C*."] **A. Marty.** 'Ueber subjectlose Sätze und das Verhältniss der Grammatik zu Logik und Psychologie.' (Artikel VI.) [Maintains against Sigwart and Erdmann that existence is not a predicate in the existential judgment. A special point is made of the absurdity of regarding the concept of existence as a predicate, and at the same time of denying that it enlarges the content of the subject of which it is predicated. There follows an interesting discussion of the nature of the inner speech-form, with the view of explaining the grammatical dress of impersonal and existential propositions. Marty rightly insists that the inner speech-form, like the word itself, is sign and not meaning. From confusion between meaning and inner form many errors have arisen; words have been treated as synonymous merely because they are connected with similar symbolic images; and, conversely, they have been supposed to differ in meaning merely because of a difference in inner speech-form. The author next considers the nature of the categorical or double judgment; under this head are included such judgments as 'This is red'; 'This flower is blue.' In all judgments which involve predicate of synthesis, the predication depends on and is inseparably blended with another judgment affirming the subject. As we obtain the concept of existence by reflexion on the impersonal and existential judgment, so we obtain that of identity by reflexion on the predicative judgment. The article concludes with an acute criticism of Erdmann's nominalism, and of the place he assigns to intuition in relation to judgment.] **A. Spir.** 'Von der Erkenntnis des Guten und Bösen.' Anzeigen etc.

# XII.—NOTES.

## WHAT THE TORTOISE SAID TO ACHILLES.

By Lewis Carroll.

Achilles had overtaken the Tortoise, and had seated himself comfortably on its back.

"So you've got to the end of our race-course?" said the Tortoise. "Even though it *does* consist of an infinite series of distances? I thought some wiseacre or other had proved that the thing couldn't be done?"

"It *can* be done," said Achilles. "It *has* been done! *Solvitur ambulando.* You see the distances were constantly *diminishing*; and so—"

"But if they had been constantly *increasing*?" the Tortoise interrupted. "How then?"

"Then I shouldn't be *here*," Achilles modestly replied; "and *you* would have got several times round the world, by this time!"

"You flatter me—*flatten*, I mean," said the Tortoise; "for you *are* a heavy weight, and *no* mistake! Well now, would you like to hear of a race-course, that most people fancy they can get to the end of in two or three steps, while it *really* consists of an infinite number of distances, each one longer than the previous one?"

"Very much indeed!" said the Grecian warrior, as he drew from his helmet (few Grecian warriors possessed *pockets* in those days) an enormous note-book and a pencil. "Proceed! And speak *slowly*, please! *Shorthand* isn't invented yet!"

"That beautiful First Proposition of Euclid!" the Tortoise murmured dreamily. "You admire Euclid?"

"Passionately! So far, at least, as one *can* admire a treatise that wo'n't be published for some centuries to come!"

"Well, now, let's take a little bit of the argument in that First Proposition—just *two* steps, and the conclusion drawn from them. Kindly enter them in your note-book. And in order to refer to them conveniently, let's call them *A*, *B*, and *Z*:—

(*A*) Things that are equal to the same are equal to each other.

(*B*) The two sides of this Triangle are things that are equal to the same.

(*Z*) The two sides of this Triangle are equal to each other.

Readers of Euclid will grant, I suppose, that *Z* follows logically from *A* and *B*, so that any one who accepts *A* and *B* as true, *must* accept *Z* as true?"

"Undoubtedly! The youngest child in a High School—as soon as High Schools are invented, which will not be till some two thousand years later—will grant *that*."

"And if some reader had *not* yet accepted *A* and *B* as true, he might still accept the *sequence* as a *valid* one, I suppose?"

"No doubt such a reader might exist. He might say 'I accept as true the Hypothetical Proposition that, *if* $A$ and $B$ be true, $Z$ must be true; but, I *don't* accept $A$ and $B$ as true.' Such a reader would do wisely in abandoning Euclid, and taking to football."

"And might there not *also* be some reader who would say 'I accept $A$ and $B$ as true, but I *don't* accept the Hypothetical'?"

"Certainly there might. *He*, also, had better take to football."

"And *neither* of these readers," the Tortoise continued, "is *as yet* under any logical necessity to accept $Z$ as true?"

"Quite so," Achilles assented.

"Well, now, I want you to consider *me* as a reader of the *second* kind, and to force me, logically, to accept $Z$ as true."

"A tortoise playing football would be—" Achilles was beginning

"—an anomaly, of course," the Tortoise hastily interrupted. "Don't wander from the point. Let's have $Z$ first, and football afterwards!"

"I'm to force you to accept $Z$, am I?" Achilles said musingly. "And your present position is that you accept $A$ and $B$, but you *don't* accept the Hypothetical—"

"Let's call it $C$," said the Tortoise.

"—but you *don't* accept

($C$) If $A$ and $B$ are true, $Z$ must be true."

"That is my present position," said the Tortoise.

"Then I must ask you to accept $C$."

"I'll do so," said the Tortoise, "as soon as you've entered it in that note-book of yours. What else have you got in it?"

"Only a few memoranda," said Achilles, nervously fluttering the leaves: "a few memoranda of—of the battles in which I have distinguished myself!"

"Plenty of blank leaves, I see!" the Tortoise cheerily remarked. "We shall need them *all*!" (Achilles shuddered.) "Now write as I dictate:—

($A$) Things that are equal to the same are equal to each other.

($B$) The two sides of this Triangle are things that are equal to the same.

($C$) If $A$ and $B$ are true, $Z$ must be true.

($Z$) The two sides of this Triangle are equal to each other."

"You should call it $D$, not $Z$," said Achilles. "It comes *next* to the other three. If you accept $A$ and $B$ and $C$, you *must* accept $Z$."

"And why *must* I?"

"Because it follows *logically* from them. If $A$ and $B$ and $C$ are true, $Z$ *must* be true. You don't dispute *that*, I imagine?"

"If $A$ and $B$ and $C$ are true, $Z$ *must* be true," the Tortoise thoughtfully repeated. "That's *another* Hypothetical, isn't it? And, if I failed to see its truth, I might accept $A$ and $B$ and $C$, and *still* not accept $Z$, mightn't I?"

"You might," the candid hero admitted; "though such obtuseness would certainly be phenomenal. Still, the event is *possible*. So I must ask you to grant *one* more Hypothetical."

"Very good. I'm quite willing to grant it, as soon as you've written it down. We will call it

($D$) If $A$ and $B$ and $C$ are true, $Z$ must be true.

Have you entered that in your note-book?"

"I *have*!" Achilles joyfully exclaimed, as he ran the pencil into its sheath. "And at last we've got to the end of this ideal race-course! Now that you accept $A$ and $B$ and $C$ and $D$, *of course* you accept $Z$."

"Do I?" said the Tortoise innocently. "Let's make that quite clear. I accept $A$ and $B$ and $C$ and $D$. Suppose I *still* refused to accept $Z$!"

"Then Logic would take you by the throat, and *force* you to do it!" Achilles triumphantly replied. "Logic would tell you 'You ca'n't help yourself. Now that you've accepted *A* and *B* and *C* and *D*, you *must* accept *Z*!' So you've no choice, you see."

"Whatever *Logic* is good enough to tell me is worth *writing down*," said the Tortoise. "So enter it in your book, please. We will call it

(*E*) If *A* and *B* and *C* and *D* are true, *Z* must be true. Until I've granted *that*, of course I needn't grant *Z*. So it's quite a *necessary* step, you see?"

"I see," said Achilles; and there was a touch of sadness in his tone.

Here the narrator, having pressing business at the Bank, was obliged to leave the happy pair, and did not again pass the spot until some months afterwards. When he did so, Achilles was still seated on the back of the much-enduring Tortoise, and was writing in his note-book, which appeared to be nearly full. The Tortoise was saying "Have you got that last step written down? Unless I've lost count, that makes a thousand and one. There are several millions more to come. And *would* you mind, as a personal favour, considering what a lot of instruction this colloquy of ours will provide for the Logicians of the Nineteenth Century—*would* you mind adopting a pun that my cousin the Mock-Turtle will then make, and allowing yourself to be re-named *Taught-Us*?"

"As you please!" replied the weary warrior, in the hollow tones of despair, as he buried his face in his hands. "Provided that *you*, for *your* part, will adopt a pun the Mock-Turtle never made, and allow yourself to be re-named *A Kill-Ease*!"

*Cambridge: Printed at the University Press.*

New Series. No. 15.] [July, 1895.

# MIND

## A QUARTERLY REVIEW

OF

## PSYCHOLOGY AND PHILOSOPHY.

### I.—CONTEXT AND MEANING.

By Alfred Sidgwick.

In a previous article (*Mind*, N.S. No. 6) I noticed some of the difficulties arising out of the common practice of using the word 'proposition' so as to confuse the distinction between assertion and sentence. The proposed remedy was, however, there left purposely rather indefinite, and the object of the present discussion is to help it to become a little less so. The question here raised is as to the best way of re-arranging some of the terminology of Logic, in face of a clear recognition that the sentence is not the assertion, and that names mean only what they are meant to mean; or that the 'logical character' of any name and of any proposition is to be sought not merely in that name or proposition taken as an independent entity, but as influenced by the special context in which it happens to be used; or again, more briefly, that it is *function*, rather than *structure*, which ought to determine our classification of actual names and propositions.

§ 1. It may be worth while first, in passing, to state what is the attitude taken towards the older Logic,—a matter which, I gather, is easily misunderstood. There is no intention or desire, on my part, to make out that the traditional way of distinguishing kinds of name and kinds of proposition is useless; it is no more useless than common-sense as opposed to philosophy is useless, or than narrow morality as opposed to freer views; it has all the value of a makeshift, as well as the defects.

Attempts at reform in Logic, and often elsewhere, are honest and sane only so far as they start from this admission and direct their attack not upon the makeshifts and the half-truths themselves but upon the common blind acceptance of them—the indiscriminate application of them in season and out of season. Logical doctrines are seldom errors to be refuted, or even superseded, in the ordinary sense; the facts of reasoning lie too near our daily life for that; rather, they are truths that need a little supplementing now and then,—truths with a blemish which from various motives we are often led to overlook.

When the purpose of logical reform is limited in this manner the ranks of its enemies are thinned as far as possible. At any rate there is no longer any ground for the usual assumption that we are wantonly throwing away the treasures of the past,—an act which the wise conservative naturally condemns at once. There are left only two sections of the conservative party to contend with,—those who dislike innovation as such, and those who have somehow formed habits of thought antagonistic to this particular kind of reform. The former section are hardly worth considering, since their function and power is only to cause delay, but the latter section would be valuable allies if we could only win them over to see more exactly what it is we are trying to do.

The chief habit of thought antagonistic to a regard for special context is, beyond dispute I suppose, that due to the attempt to make Logic Formal, or (worse) Symbolic. Whatever value these developments of Logic undoubtedly have is bought at a cost which deserves to be reckoned rather than ignored. But, if one may judge, for instance, from a recent unfinished discussion in *Mind*[1], there is hardly a suspicion in the minds of formal logicians that they have any cost to pay. Mr Johnson evidently regards it as axiomatic that an argument is built out of its separate parts as a house out of separate bricks. Certain forms of words have certain fixed meanings; you put them to various uses, and still the items remain unchanged. That is precisely the half-truth which, we contend, stands most in the way of any effective recognition of the

[1] Oct. 1894, p. 582, and Jan. 1895, p. 143. By the way, my real contention was that a form of words has a different import at *different* times, not 'at the same time'; a categorical sentence may be, I contend, of different import in different contexts. And I regret the need of pointing out that my object was to *raise* a question, not to beg one; and that these are different operations. What Mr Johnson appears to mean by the charge of question-begging is that the reasons I give are only cogent if they are so. Granted. And are they cogent or not? That is the question raised. I hope to show that the formal logician misapplies the axiom that a whole is the sum of its parts.

influence of context on meaning. It is true to a large extent, and it really seems required in Symbolic Logic; but that is no reason why it should be trusted on the wrong occasions. In order to correct its misleading tendency we need to remember that the form of words is only one among other guides to the meaning of a sentence. Its position in an argument—the use that is made of the sentence on a particular occasion—has also to be taken into account if we care to guard against hasty assumptions.

The hostile purpose of this article is, then, to indicate as well as the limits will allow, not that Formal Logic is entirely useless, but that the more plausible a given error is, the more does the cramping influence of Formal Logic spoil our chance of dealing with it successfully. The more need there is, in a given case, for the careful application of logical doctrine, the less does our ordinary Logic answer to the call. So long as no one disputes that a given name or sentence is of such and such a kind, there may be some value in the accepted rough distinctions; they serve at least for a sort of fair-weather Logic; for easy-going or provisional purposes. But wherever any serious doubt arises in regard to the logical character of a name or proposition—for instance, the doubt whether a given proposition is or is not rendered meaningless through failure to define one of its terms—our choice lies between cutting the knot in some off-hand, pedantic, unconvincing manner, or else taking the context into account. Either we must declare that the name (or the proposition) is plainly of such and such a sort; that Logic says so and there is an end of the matter; or we must follow the more difficult course of recognising that the external form of a name or a proposition never gives more than a *primâ facie* account of it, an account designed to suit the average context but which may be entirely misleading on any given occasion. In the end our choice between these methods depends on the amount of criticism we are led to apply to the matter in hand. Where the desire for truth is easily satisfied, the more troublesome method seems unnecessary; but wherever a doubt has arisen the doubter will hardly take for his answer a mere re-assertion on the part of someone to whom the doubt has happened not to occur. Though fair-weather Logic may be assumed to have its uses, we need a foul-weather Logic too.

Yet some hope of harmony with the formal logicians lies, I think, in the fact that attention to context is not wholly unknown to themselves. If they can be informal at times, why not at other times also? It is only proposed to extend a method which is already to some extent in use. Unintentionally, or with incomplete intention, the thin end of the wedge

has been long ago inserted. Probably no Logic has yet been written which entirely fails to recognise the influence of the context of words and sentences upon their logical character. But our existing Logic has mostly been content to regard context as a disturbing element. The traditional plan has been to classify names and propositions so as to suit the majority of contexts, and then—more or less unwillingly—to admit the existence of a few exceptional cases. In proportion as our aim is to make our Logic 'formal' (*i.e.* general) we try to look above and beyond the special context, and to think of a sort of average context as the medium in which words and propositions exist. What we shall here recognise, on the other hand, is that the average context is as non-existent a thing as any other average. Its assumption is a rough and ready artifice. Words and propositions, like everything else, exist not in an average or a fixed environment but in numbers of special and changing environments which affect their character.

It is easy to find stray examples of the piecemeal application of our method. Such a case occurs, for instance, in the first chapter of Dr Keynes' *Formal Logic*,—a book which expressly aims at taking as little account of context as possible[1]. At p. 12, in explaining the technicality 'collective names', he writes: "Some logicians imply an antithesis between collective and general names, either regarding collectives as a sub-class of singulars, or else recognising a three-fold division into singular, collective, and general. There is, properly speaking, no such antithesis...for the class of collective names overlaps...each of the other classes". And he goes on to say that the correct and really important logical antithesis is between the collective and distributive *use* of names. In this Dr Keynes is surely right. If we speak of a group—say a nation—collectively, we mean something different from what we mean if we speak of it 'distributively', and any group can be spoken of in either manner. The mere word 'nation', taken by itself, is neither distinctively one thing nor the other; in order to say which it is, we are forced to enquire into its special context.

This example is mentioned in order to show that our method is not wholly incapable of commending itself even to those logicians who wish to keep as closely as possible to the Logic which takes into account only average context. The difference is that we are here to apply it more consistently than it has yet been applied. Of all distinctions drawn, otherwise than by actual function, among kinds of name, we have to say what Dr Keynes is willing to admit in this particular case,—that

[1] Formal Logic, according to Dr Keynes (3rd edition, p. 3) 'has no cognizance' of context.

'some logicians imply an antithesis" between *X* and *Y*; that "there is, properly speaking, no such antithesis" (or rather, that the distinction is a misleadingly abstract one) since the two classes overlap; and "that the correct and really important logical antithesis" is between the *use X* and the *use Y*. Kinds of name, when distinguished with reference to context, are merely kinds of *use in asserting* to which any name may be put. And, for a like reason, distinctions among forms of sentence must give place to distinctions among kinds of *use* to which sentences are put, —that is to say, among kinds of assertion. Kinds of assertion are kinds of use in reasoning. Thus the special context of a word is the proposition in which it is used on a given occasion; and the special context of a proposition is the piece of reasoning into which on a given occasion it enters.

§ 2. Of distinctions among names in a special context, or among kinds of use to which any name may be put, the one that possesses most importance[1] for Logic is that between (what may be called) the *descriptive* and the *non-descriptive* use of a name. This corresponds, in intention[2], to J. S. Mill's distinction between 'connotative' and 'non-connotative' names; and, in its application, it corresponds roughly to the old distinction between general and proper names; that is to say, general names are on most occasions descriptive, while proper names are on most occasions not so. For shortness, we may speak of descriptive and non-descriptive names (instead of 'uses'), meaning thereby names *when put* to one or the other use. For there is no such thing as a name which is descriptive or non-descriptive in the sense of being *incapable* of being put indifferently to either use on occasion. The old definition of a general name as one which is "*capable* of being correctly affirmed, in the same sense, of

[1] This statement is justified further on; p. 302.

[2] The intention was to put into two separate classes names which do and names which do not admit of *definition*. This point has been missed by those who (like Jevons and Bradley) choose to think of 'connotation' as 'ideas excited' by a name, and who therefore class proper names as connotative. Mill's intention is clearly shown in several passages; e.g. where he says (i. II. 5) that proper names are not, in his sense, 'connotative', because they "are not dependent on the continuance of any attribute of the object". And indeed, since all names that have any use or value at all 'excite ideas', it is only when taken in Mill's sense that the distinction has importance for Logic. To Mill, the connotation was not the mental picture which a name happens to convey, but the essential attributes of the class, or the list of attributes the absence of any one of which in a given case would prevent our applying the name. Still, in order to avoid possible ambiguity, we may here use the word 'descriptive' instead of 'connotative', and 'the definition' instead of 'the connotation'. A descriptive name is a name which is so used that the enquiry after its definition is relevant.

each of an indefinite number of things" is thus to be condemned as misleading. General names are, in practice, freely used as proper names, and proper names are occasionally used as general.

§ 3. As soon as we try to make the essential character of descriptive names turn upon actual function, we are launched upon the enquiry into the different kinds of proposition, since it is only in propositions that names perform their function. We shall have to distinguish the different uses, within the different kinds of proposition, that names may serve. And we shall find that, for logical purposes, the most fundamental distinction among propositions resembles in some important respects that which is usually drawn between 'categoricals' and 'hypotheticals[1].'

The resemblance is vitiated, however, in the same way as that between 'descriptive' and 'general' (or 'connotative') names. The hypothetical and the categorical have been too often regarded as kinds of proposition which, whether or not clearly distinguishable by the form of the sentence alone, were at any rate constituted by something in the 'proposition' itself, and not by the use to which it is put in a given argument; at best by the use to which it is on the whole most *capable* of being put. The proposition, like the name, has been too often imagined as an isolated entity, its logical character as being independent of its actual context.

As in the case of connotative names, there is one needless confusion about the nature of the hypothetical, which may be briefly mentioned and dismissed. The hypothetical as a whole is not the same as its own consequent clause. Even Mill fell to some extent into this confusion, and at the time he wrote there was more excuse for it than now[2]. I say, *even* Mill, because he very nearly escaped this elementary blunder. He falls into it where he expressly defines the categorical proposition, but not in explaining the nature of the hypothetical. Categorical propositions, he tells us, are those in which 'the assertion' is not dependent on a condition. If this definition means anything, it means that in hypotheticals 'the assertion' *is* dependent on a condition; which of course is not true of the hypothetical as a whole, but only of its consequent clause. All assertions, as such, assert something unconditionally; and, as Mill himself saw, half a page before and half a page after the passage[3] where he states

[1] The word 'hypothetical' is here used in its widest sense,—to include all propositions other than 'categorical.'

[2] It is still to be found in the books whose function is to hand on the older Logic with as little alteration as possible.

[3] Bk. i. ch. iv. § 3.

this as being the defining peculiarity of categoricals, hypotheticals are also assertions to that extent. The inconsistency is probably due in great part to the influence of the old notion that all propositions are best understood as *predications*,—a superstition which Mill, in spite of occasional lapses, did a good deal to destroy. Largely through Mill's help we have learned that to predicate is not the only thing that a proposition can do.

A somewhat similar error is fallen into by Mr Johnson[1]. Instead of seeing that the proposition 'If *A*, then *C*', in the commonest and most important of its uses, *asserts a relation* directly between *A* and *C*, he speaks of it as merely asserting a relation between *A* and non-*C*, and assumes that the only alternative is to *assert the obligation to assert* the latter relation. What can be gained—except possibly for the purposes of Symbolic Logic—by thus refusing to recognise the direct relation between *A* and *C*? It is not as if the hypothetical were peculiar in requiring a thinker reflecting on his thought. All assertions claim to be made under obligations to the truth; all assertions have consequences. The grounds of the hypothetical, as much as of any other assertion, may easily be defined to lie outside the assertion itself. And how could a hypothetical serve as major premiss, if it really asserted nothing beyond the non-existence of '*A* non-*C*'? In some way or other the positive assertion that *A indicates C* must be imported into it before it will perform its most normal function. In its use as major premiss the positive meaning is already somehow there.

In order to classify propositions by the function they perform, it is necessary to break entirely with the view that a proposition has its character or meaning finally determined by the form of the sentence expressing it. Whatever be the form of the sentence there are only two distinct uses the assertor can be intending to make of it,—to express either a *major premiss* or a *minor*[2]. We do not, in saying this, come into real conflict with Mr Bradley's view, in the *Principles of Logic*, that the major premiss is 'an effete superstition'. Indeed, I am under great obligations to Mr Bradley's book, and still more to Mr Bosanquet's, for the account they have given of the process of judgment generally; and the chief reason why I do not here

[1] *Mind*, N.S. No. 1, pp. 18, 19.

[2] These names must be guarded against the small misinterpretation which is liable to arise from their mechanical determination in the old doctrine of the Syllogism. The distinction, as we shall understand it, has nothing to do with the order of the terms in the sentence expressing the conclusion. The simplest account to be given is that our 'major' and 'minor' premisses correspond in function to those in the first figure only.

expressly use more of their results is that, for the limited purpose kept in view, they seem rather needlessly deep and intricate. One can really see the defects of Formal Logic better from a position in some respects nearer its own, leaving room for further refinements afterwards. And Mr Bradley's objection to the 'major premiss' seems to me not very well described as such; it is rather an objection to the use made (or supposed to be made) of the notion by his opponents. In his account of the hypothetical, our 'major premiss' is sufficiently contained.

§ 4. When we look broadly at kinds of assertion apart from context—that is to say, when we consider them as existing in an average context, or as distinguished by the use in reasoning which they most commonly serve—we might very naturally divide them into assertions of *general rule*, and assertions of *particular fact*; the former being commonly used as major premisses, the latter as minor premisses. Our half-understood facts of observation are illumined by theory, and so made fuller of meaning and substance; our vague theories are applied in particular cases, and so given a clearer outline and a less indefinite content. Normally, the function of an assertion of general rule is to act as major premiss to all particular cases that can be brought under it, while that of an assertion of particular fact is to act as minor premiss, and so to be explained by any general rule which bears upon the case.

There are, however, two reasons why this distinction cannot quite be identified with that between major and minor premisses. One is, that *in becoming premisses* propositions often undergo an important change from what they were in their unattached condition. This point we will return to further on[1]. The other is that the distinction between 'general rule' and 'particular fact' is difficult to apply. One general rule may be less general than another, and so be used to play the part of 'particular fact' to it[2]. Or again, when our major premiss is what the older Logic would call a 'singular' proposition (e.g. 'The Thames runs eastward'), then, though it be intended to throw a definite light upon the particular fact 'There is the Thames', yet taken by itself it is difficult to distinguish from an assertion of particular fact. Whenever we classify terms or propositions by anything else than their use on special occasions, we shall find the classes overlap.

Rather less vague, though nearly the same in effect, is the division into assertions which state the inferribility of one fact from another without asserting that the facts themselves are

[1] Pp. 299–302.

[2] Any syllogism in Barbara where the minor premiss is not a 'singular proposition' would be an example.

true, and on the other hand assertions which predicate about a Subject. Here again we cannot prevent the overlapping, so long as we have in view only *isolated* propositions, or—what is the same thing—general *capabilities* of use, instead of actual uses. It is of the essence of any piece of recognised truth, and therefore of any proposition, that it may be used either as an abstract ground of inference or as a predication about a Subject. Its position between less abstract truths on one side and more abstract truths on the other gives it two kinds of value in use. And its value in use is the ultimate source of its meaning. Apart from actual use, therefore, the logical character of all propositions is alike; difference of logical character is purely the outcome of restriction, for the time, to one use as contrasted with the other. Definite logical character is a fleeting, temporary thing.

This division, however, needs only a slight alteration. It expresses very well the character of major and minor premisses respectively, and so long as we remember that the distinct kinds have no *independent* existence, but that each only exists relatively to the other, all difficulty about the overlapping is avoided. Let us say, then, that one kind of assertions state the inferribility of a fact $P$ from a fact $M$, without asserting the truth of those facts, while the other kind state the truth of the fact $M$. If we are to keep the distinction between the hypothetical and the categorical at all, while admitting (as it seems we must) that every assertion, as such, is a downright assertion and yet can be made to confess to a certain abstractness,—and I agree with Mr Bradley in thinking the distinction useful nevertheless —then this appears to be the best way in which we can distinguish them. Its peculiarity lies in the recognition of a connecting link ($M$) which binds the two assertions into one, and so makes the distinction between them hold good only *within* a syllogism. And in order to mark this peculiarity, and so avoid confusion with the more usual ways of drawing the distinction, it will perhaps be safer to use some other names than hypothetical and categorical; we might call the former *inferential* assertions and the latter *predicative* assertions (or predications) without any great harm[1].

When we admit that no proposition has its logical character

[1] The name 'inferential' has been used by Miss Jones (*General Logic*, p. 42) for the hypothetical conceived as an independent entity. Since, however, it has not yet come into general use in this sense, while it describes very well the (now widely recognised) positive relation asserted in the hypothetical, or major premiss, no difficulty need be created by it. Our use of the name 'predicative' is purposely intended to conflict with the older custom.

decided except by reference to its actual use, this distinction will be found to correspond exactly with that between major and minor premisses as here defined. Take any example of what in the ordinary Logic is called an '*A*' proposition, and it can be seen to have two quite distinct logical characters according as it is used as major or as minor premiss. In the former case it is a pure inferential. Take first the general proposition, —commonly expressed in a sentence of the form 'All *X* are *Y*'. Clearly this can be interpreted 'If anything is *X*, it is *Y*' without in the least interfering with its function as major premiss. Whether or no the speaker holds, and intends to assert categorically, that certain existing things called *X* are *Y*, at any rate this part of his meaning is irrelevant to the purpose of stating that *X* may be taken as a sufficient ground for the inference *Y*. This truth is less easy to see when the proposition is 'singular'—for example, 'The Thames runs eastward' or 'Willesden is where they take the tickets'. Such cases provide, in fact, the extreme instance of difficulty in regarding the major premiss as a pure inferential; for through our inveterate habit of interpreting propositions in the light of their average context, we are apt to miss entirely the point here intended. We seem to be required to deny that these propositions *can* be predications,—which would of course be absurd; what is really said is, not that a sentence used as major premiss is a sentence that can have no predicative meaning, but that when and while it is used as major premiss only its inferential meaning is relevant. It is the minor premiss (e.g. 'Here is Willesden') not the major, which takes care that the fact of Willesden's real existence shall not be overlooked. What is meant, in short, is that a major or minor premiss, as such, is something different from the two premisses combined, and different also from that incomplete entity the unattached proposition not yet employed for one use to the temporary exclusion of the other. Any premiss, by itself, is an unreal abstraction from the syllogism. The major premiss is that part of the syllogism without which the minor would have a meaningless predicate; the minor is that part of the syllogism without which the major would be a pretended 'rule of inference', detached from all application,—detached from that employment which alone can justify its existence or give it a meaning. It will be convenient, then, to use the names 'inferential' and 'predicative' assertion as synonymous with major and minor premisses respectively. A major premiss is a pure inferential, though the sentence expressing it may be used as a minor premiss on other occasions. A sentence which appears to predicate may be used for either purpose, but in order to predicate with a meaning, it must be a minor premiss.

In regard to the minor premiss, however, a difficulty is to be noticed in the case of a Sorites. Suppose we are given, as premisses 'If $Y$, then $Z$' and 'If $X$, then $Y$'; allowing the conclusion 'If $X$, then $Z$'. This conclusion may or may not be intended to assert as a fact that there *are* $X$'s and that all of them are $Z$'s; if it is so intended, then the minor premiss 'If $X$ then $Y$' must be equally predicative, for in order to support a predicative conclusion an inferential minor premiss would not suffice[1]. On the other hand, if the conclusion is intended as an inferential, this can only mean that it is a major premiss in a further syllogism,—e.g. 'If $X$, then $Z$; $S$ is $X$; therefore $S$ is $Z$',—in which case we have a Sorites with 'If $Y$ then $Z$' for its ultimate major premiss, '$S$ is $X$' for its ultimate minor premiss, and an intermediate proposition 'If $X$, then $Y$' which has already been treated as a minor premiss, and yet seems to be itself as non-predicative as a proposition can be. How are we to reconcile this case with the doctrine that the minor premiss, as such, is predicative?

Two ways out of the difficulty may be suggested. We might regard 'If $X$, then $Y$' as *major* premiss to '$S$ is $X$', and the resulting conclusion as minor premiss to the ultimate major; or we might say that in a Sorites the ultimate major premiss is inferential, the ultimate minor premiss predicative, and the intermediate propositions not distinctly characterised,—capable of being viewed in either light at will. Indeed, these intermediate propositions are never related as premisses to the ultimate conclusion. They are rather the raw material out of which (together with one or other of the 'ultimate premisses') the real premisses are made. If we adopt either of these explanations, then, it is true that a major premiss, as such, is inferential, while a minor premiss, as such, is predicative. Though any sentence may be used to express either kind of assertion, the assertions themselves are really different, when they are regarded as constituted by their function,—that is to say, when they are recognised as having no separate existence except *in* a syllogism.

§ 5. Propositions regarded as constituted by their actual use in a syllogism cannot strictly be said to have independent import; and yet if we are to speak of their difference of import at all, we can hardly avoid assuming their independence. But this, after all, is only the old difficulty we find in speaking of 'things'. Things of any sort are, in strictness, created and sustained by their environment; they exist in action or not at all; the assumption of their 'reality' is a useful artifice, en-

[1] See below, p. 293, as to the implication that $S$ 'exists'.

abling us to distinguish between more and less pressing questions that may be raised, and to find a foothold in order to raise the former first. I see no objection therefore to speaking of the inferential and the predicative assertions *as if* they had independent import, so long as we remember the artifice in time to prevent its leading us astray.

There is another reason also for doing this. The majority of assertions come to us as independent entities rather than as parts of an expressed syllogism, and we are left to imagine uses for them,—to see them as potential major or minor premisses ready for use and only waiting to enter into combination when the occasion offers. It is natural that there should be a good deal of agreement as to the special use which most befits a given truth as it comes before us, or which is the most pressing or obvious use to make of it; and it is in this way, no doubt, that we draw convenient rough distinctions like that between assertions of general rule and assertions of particular fact. Overlapping distinctions are not to be condemned except where they cause actual trouble; they are excellent servants so long as they are kept in their proper place.

There is a sense, then, in which we may speak of inferential and predicative assertions as having an independent import, and even as waiting to be combined in syllogisms. So regarded, there are some interesting characteristics to notice. In the first place, when we analyse the two kinds of assertion into terms, we must avoid using the notion of $S$ and $P$ for the inferential; and the simplest analysis of it is into Antecedent and Consequent ($A$ and $C$). The relation asserted is a relation between 'facts', and is quite independent of the question whether, in the sentence which happens to be employed, $A$ and $C$ are names or propositions. 'Heated bodies expand', or 'Expansion accompanies heat', or 'If the heat of a body increases, expansion occurs', or 'If a body is heated, it expands' are forms of sentence which may or may not, by grammatical or rhetorical accident, have different shades of meaning, but at any rate the same assertion—Fact $A$ indicates fact $C$—can be made quite intelligibly by means of any of them. The assertion is that such facts are so related in the course of Nature that $A$ may be safely used as a sign of $C$; and like any other assertion it may be made either as true or for the sake of testing its truth,—a difference of intention which stands altogether outside its purpose as major premiss. On this account the grounds on which its truth happens to be justified do not in any way enter into the assertion itself. It is accidental, for instance, whether the relation is regarded as 'between phenomena' or 'as holding good, once and for all, without distinction

of place or time or circumstance'[1]; and therefore the distinction used by Mr Johnson and Dr Keynes between the conditional and the hypothetical, is from our point of view irrelevant. 'If virtue is involuntary, so is vice' can serve for a major premiss just as well as 'If a child is spoilt, his parents suffer'.

One characteristic difference of import between the inferential and the predicative assertion has been already suggested above. A predicative assertion never contemplates the possibility that its *S* does not exist, since its very object is to tell us that it exists in a particular way, with particular qualities. On the other hand the object of the inferential is to tell us, not that *M* is true and therefore also *P*, but that if the fact *M* is true, then *P* may be inferred from it; and since this involves also the assertion that if *P* is not true, then we may infer that *M* also is not true, it is clear that the question whether either fact is true cannot be begged without entirely stultifying the assertion. Such a question may indeed be openly raised and answered, and the answer may be used as a minor premiss; but a major premiss, or pure inferential, must be something different from the major and minor premisses rolled together.

Again, in saying that the assertion '*M* indicates *P*' *involves the assertion* 'non *P* indicates non *M*', we come upon another characteristic peculiarity of the inferential. A rule of inference has always a two-sided application,—may act as major premiss to two entirely different minor premisses, and so guarantee two entirely different conclusions; either term of an inferential may become the *M* term of a syllogism, while in a predicative assertion (as contrasted with a predicative sentence) it is only the predicate which can serve as *M*. Both these truths, and especially the latter, were much obscured by the old rules of Conversion, owing to their pre-occupation with sentences. Sentences may often need conversion before we can see clearly how to put them together as expressing premisses in the first figure. But with assertions the case is otherwise. To predicate is to lay more assertive emphasis on one term than on the other, and it is always the emphasised term which is the predicate. There is nothing, therefore, that can be called a predicative *assertion* until the distinction between *S* and *P* is already drawn, and then there is no further use for conversion.

Even in the case of inferentials, it seems on the whole better not to speak of their 'conversion' (or 'contraposition'), though their two-sided meaning does perhaps give some excuse for doing so. No premiss is ever converted, and to regard a given sentence as an assertion is only possible when we regard it as

[1] Keynes's *Formal Logic*, 3rd edition, p. 211.

an actual or potential premiss; yet an inferential *assertion*, and not only the sentence expressing it, is capable of a double use which reminds us irresistibly of contraposition. As noticed just above, it may be used for getting two different conclusions with the aid of two different minor premisses; and such two uses may be called two different assertions. On the other hand they may be said to have the same force, since each of the minor premisses is related in the same way to one of them. In the language of the hypothetical syllogism, each of the two minor premisses 'affirms the antecedent' of the major in one of its forms, and 'denies its consequent' in the other[1].

§ 6. With the old doctrine of conversion, and equally with obversion, inversion, and the other processes of the so-called 'Immediate Inference', we have nothing to do. We have no interest in rules setting forth the average equivalence and the failure of average equivalence between certain forms of sentence expressing class-relations. The value of such rules depends partly on the misinterpretations to which the *AEIO* forms of sentence are commonly liable, and partly on the need of reducing sentence-syllogisms to the first figure. It is doubtless an important grammatical fact that the sentence 'All *A* is *B*' does not usually mean the same as 'All *B* is *A*'; nor 'Some *A* is not *B*' the same as 'Some *B* is not *A*'; and it is worth while, in the same way, to remember that 'All *A* is *B*' usually means the same as 'No *A* is not *B*'; and so on. But Logic, from our point of view, has no more direct concern with the *usual* meaning of sentences than with the usual meaning of any word. There is of course always some convenience to the logician, as to other people, in knowing the grammar of his period and country, but there is more than mere convenience to him in keeping in mind the limits of the importance of these accidental, changeable facts.

Under this view of Logic, many of the old distinctions must be condemned as merely grammatical in effect, though logical in intention. For instance, the distinction between affirmative and negative propositions needs a thorough reconstruction in order to adapt it to the special-context Logic; for there is no function in reasoning which cannot be served by an *E* sentence exactly as well as by an *A*, or by an *O* sentence exactly as well as by an *I*.

This does not mean, however, that we must cease to recognise contradictory and contrary opposition. Far from it.

[1] Thus, with the major premiss 'If *X*, then *Y*', either '*X* is true' or '*Y* is false' may be used as minor,—getting for the respective conclusions '*Y* is true' and '*X* is false'. But either of these minor premisses will give the same conclusion with the major premiss 'If *Y* is false, *X* is false'.

But these notions will need to undergo some change. We must regard every pair of contradictory assertions as corresponding to the answers 'yes' and 'no' which may be given—by different people or at different times—to any properly pointed question. To give either answer is equally an assertion as contrasted with the state of mind called doubt, though it is always the case that the negative answer may be satisfactorily given on a less extensive review of the facts than the positive one. We can always see, for instance, that a given rule admits of 'some' exceptions, more easily than we can see the whole range of exceptions which ought to be recognised. Or we can always see that $S$ is not $P$ more easily than we can see exactly *what* $S$ is. In contrary opposition, on the other hand, neither assertion is negative. Under our scheme, as under the traditional one, contrary opposition is fuller than contradictory opposition; but under our scheme the distinction turns wholly upon this difference, and not in the least upon the form of sentence. The negative assertion is vaguer than the positive, and runs less risk.

The same is true of the negative name, which is meaningless unless it can be regarded as a predicate term[1]. Between the answer 'no' to the question whether $S$ is $P$, and the answer 'yes' to the question whether it is non-$P$, there is no difference of meaning,—except so far as, by an accident of the custom of using two apparently contradictory names (e.g. 'satisfactory' and 'unsatisfactory',) there is room for a third alternative. It is not, therefore, quite strictly true of sentences that '$S$ is not $P$' is equivalent to '$S$ is non-$P$'; but it is strictly true of *assertions*. It is not exactly true that every descriptive name is one of a pair of contradictory names; for, besides the case just noticed—where '$P$' and 'non-$P$' are, by local custom, not exhaustive—the existence of a given 'negative' name in a language is determined not by purely logical considerations, but by the extent of ordinary use which people in general can easily see that the name would have; but it is true that every descriptive name is potentially one of such a pair,—or that a negative name may always be used except for conventional or literary reasons, and that the accepted custom which to-day forbids the use of a given negative name as heavy or barbarous or fanciful, may tomorrow be altered.

§ 7. Our recognition of the two main kinds of assertion had for its purpose (as said in § 3) the enquiry into the essential character of descriptive names, and we have found that there are four ways in which a name may be used as a

[1] For instance, as the antecedent of an inferential, it is meaningless except in connection with minor premisses.

term,—*A*, *C*, *S*, and *P*. It remains now to ask which of these ways of using a term makes it descriptive. This leads us to look more closely at the nature of the syllogism.

In the older Logic, 'Categorical Syllogisms' were marked off from 'Hypothetical Syllogisms', but from our point of view the distinction is needless and trivial. So far as it was made to turn on the character of the major premiss it depended on the accidental form of the sentence, the so-called 'categorical proposition' obscuring the really hypothetical character of the assertion. But even when this is avoided, a distinction might conceivably still be drawn depending on the minor premiss. We might, for instance, regard as distinct the two forms:—

| (Categorical) | (Hypothetical) |
|---|---|
| If *M*, then *P* | If *M*, then *P* |
| *S is M* | *M is true* |
| *S* is *P* | *P* is true. |

The difference must of course be admitted, but what can be the use of the distinction? I do not remember having ever seen an attempt made to suggest a use for it. It is easy to make innumerable distinctions if we go on the plan of registering all the differences we happen to see, without enquiring as to their precise importance. And further, why should the second form of syllogism be marked out as specially hypothetical? The minor premiss is just as predicative as that in the other form. When we say that the fact *M* is true, we 'predicate it of the real' generally; in the other case we make a reference (*S*) to some special part of the totality of things. In a predication where the reference-name *S* is used there is never any question raised as to the 'reality' of *S*; that term is, as we noticed above, out of emphasis; we *assume* that *S* 'exists', in order that we may say how it should be compared with other existing things. On this account we shall regard the so-called categorical syllogism as a merely accidental variety of the 'hypothetical syllogism', which, being simpler in structure, may be called the fundamental form.

Another simplification can be made by regarding the *modus tollens* as an accidental variety of the *modus ponens*. Indeed, when we ask, of an inferential 'If *X*, then *Y*' which term, *X* or non-*Y*, should properly be called its antecedent, it is not possible to give the preference to either unless we take a particular minor premiss and conclusion into account. It follows from the two-sidedness of inferential assertions, that there is nothing else to show the priority of either term when we look beyond the accidental order of the words in the sentence. For example, the sentence 'All *X* are *Y*', when

used as major premiss, expresses the two-sided inferential 'From $X$ follows $Y$' and 'From non-$Y$ follows non-$X$'; so that, with the minor premiss '$S$ is $X$', or '$X$ is true', '$X$' must be considered the antecedent term; and with the minor premiss '$S$ is non-$Y$' or '$Y$ is false', 'non-$Y$' becomes the antecedent. It is thus always the minor premiss, used with the inferential on a given occasion, that decides which term is really the antecedent for the time being.

But these simplifications are a matter of convenience merely. There is also a deeper difference between our view and that which has been handed down in the text-books. When we admit that no assertion has any definite logical character except in a context, we cannot in strictness regard the premisses of a syllogism as existing independently of each other and of the conclusion,—as being put together and then the conclusion drawn from them. It is only our loose and convenient habit of regarding propositions as having independent existence which leads us to think of the syllogism as representing a *forward* movement of thought, from evidence to conclusion. The better view seems to be that the actual formation of a judgment is only syllogistic so far as, at any stage, the result is reflected upon, and an enquiry made into its grounds. Psychologically speaking, the formation of a judgment must be a process of growth, from the more to the less indefinite, so that the immediate precursor of that stage of any judgment where it can be expressed as a debatable proposition cannot be a pair of premisses, nor even a piece of evidence, but can only be the judgment itself in a less developed form. And therefore a syllogism is rather a representation of proof than of discovery. It is a judgment made into a conclusion from premisses, a judgment rationalised by being seen as depending on an inferential and a predication. The premisses are not in existence, as separate premisses, until after the question is asked which is answered in the conclusion. Premisses and conclusion have no priority, the one to the other. They are related to each other as the sides containing an angle are related to the angle they contain.

These truths are almost entirely obscured in the traditional Logic. Syllogism, it is too often supposed, is a process of putting together two propositions, the meaning of which is accurately known, and drawing from them a third proposition which is not discovered until the operation has been performed. Correct syllogising is thus conceived as the correct drawing of conclusions from given premisses, and the main interest of the process as lying in the possibilities of error in doing this,—possibilities which resolve themselves entirely into those of

misinterpreting sentences after they have been put into the *AEIO* forms.

So false and narrow a view of the nature of syllogism could not have obtained its present hold in Logic if there were not much that might be plausibly said for it. It is, no doubt, largely due to the mere confusion between assertion and sentence, but there are also some undeniable facts which tend to support the illusion. As we have noticed already, it is by no means uncommon to acquire a piece of rather indefinite information which is waiting to be made into a premiss when it shall be wanted to guarantee some conclusion. Nor can it be denied that we may apprehend, in a way, the 'separate' meaning of two or more such items of information, and even see that they are fit to be used together as premisses, or as links in a chain, before we have any clear idea of the conclusion they guarantee. Is it not, therefore, far-fetched and paradoxical to insist on regarding the syllogism as purely reflective?

Not, I think, if we are careful to limit our meaning so as to avoid denying these obvious facts. And we really need not feel the smallest temptation to deny or forget them. For it is clear that, when we have two 'premisses' and do not yet know exactly what conclusion they support, that fact implies some failure in our apprehension of the *meaning* of the 'premisses' themselves. Their joint meaning really contains the conclusion; and yet, so superficial is our view of their meaning that we fail to see that aspect of it. Till we perceive their joint effect, they are only incompletely understood sentences; the whole of the assertion contained in them is not present to our minds. Still more is this the case where we have an unattached major or minor premiss; for then our appreciation of its meaning is even more consciously incomplete. It can never happen—except where we are dealing with verbal formulas rather than with judgments—that we have *no* idea how the inferential or the predication is to be applied; but to have only a vague idea, and even a consciously vague idea, is one of the commonest experiences in life.

The essence of Logic is reflection upon judgments. If it is concerned at all with the distinction (such as it is) between judgment and inference, it is only for the sake of theoretically understanding the enquiry into the grounds of any given judgment proposed. Not inference as such, but *sound* inference, is what Logic attempts to explain; its enquiry is not 'How do we reach new knowledge?' but 'How, when we think we have reached a piece of knowledge, can the step be justified?'. The novelty of the knowledge has nothing to do with the matter. As Mr Bosanquet says "*discovery* is an accident and not an

essential of inference.. The activity of inference cannot be identified with the perception of something new". How knowledge actually grows, in the individual mind, is necessarily one of the obscurest enquiries possible, for to be conscious of a single step taken is already to reflect on past results and to judge them as more and less secure. The consciousness of the process does not begin till we have got past the formation of some sort of judgment, and wish to know what sort of judgment it is,—a rash or a guarded one. In order to be a result of reasoning, in order to be recognised as a growth of knowledge, it must commend itself to our reflective approval.

It is obvious, further, that propositions 'independently believed', and fit to become premisses, vary a good deal in the extent of change that comes over them when the syllogism is completed,—when they are re-viewed in the light of a particular conclusion which they are supposed to guarantee. In mathematical reasoning there is little or no change to be observed in them, but in the enormous mass of less exact reasoning for which everyday language has to be used, the change is very noticeable. To believe two propositions as justifying a conclusion is often much more of an undertaking than merely to acquiesce in their truth in a general way and without making this particular application of it. They have become more elaborate, fuller of meaning, by the time the application is made. It is not an uncommon experience to find, when the conclusion comes to be drawn, that the separate premisses are less trustworthy than they seemed before, that they need some modification and that the conclusion is *not* warranted by them in their corrected form. This happens, in fact, whenever we are led to an absurd conclusion through adopting a rule while forgetting its exceptions, or through adopting a loose convenient description of $S$ as completely satisfactory. But in either case, whether the conclusion upsets the prior beliefs or merely makes their meaning clearer, they are not yet the premisses, but only the (less responsible) prior beliefs, until they are seen in the light of the conclusion itself.

Even outside mathematics there are a proportion of cases where the application of an accepted rule to a particular case appears to do nothing towards defining the rule more clearly than it has till then been defined; where the alteration wrought in the rule by each succeeding application of it is practically invisible, or is only to be seen when long periods of time are taken into account. We may admit further that in the case of any generalisation—even so loose a one as the proverb (e.g.) that 'honesty is the best policy'—there are many applications of the rule which will not appreciably change its meaning. In

all such cases our view of the syllogism, however strictly accurate it may be in theory, is at least not wanted in practice. Wherever a piece of syllogistic reasoning is entirely undisputed, there the 'premisses' (or rather, something almost indistinguishably like them) may be accepted before the conclusion is drawn, as well as being used for justifying it on reflection.

For our present purpose, however, these admissions are harmless. The subtler truths of Logic are on many occasions not required in practice; they are needed most where conclusions are most disputable,—that is to say, neither where the conclusions are most undeniably wrong nor where they are most undeniably right, but where the error contained in them is most plausible. It is specially where a plausible conclusion is disputed by a more careful Logic that we need to remember that 'evidence' undergoes a subtle change in becoming 'premisses', and that the question is open whether, after all, the change is important in the special case. This is the possibility of error in syllogising which dwarfs all others in importance. Our power of logical insight, of guarding against plausible error, are taxed to the utmost not where the problem is to draw a correct conclusion from two sentences taken as true and their terms as perfectly definite, but where, in searching for the grounds of a judgment proposed as debatable, we come upon premisses which *as separate propositions* are easily and rather loosely believed. The art of the logician then consists in the skill with which he distinguishes between their meaning separately and their meaning when combined,—that is to say, between the degree of definiteness required for each of these two purposes respectively. Where a rigid, wordy Logic leads us to call a conclusion proved, this subtler method shows us the points at which the proof requires completion.

The nature of the change is somewhat complex, since it affects each of the two propositions more or less, and varies in its amount with the disputability of the conclusion. On some occasions its prominent feature is the change from a more abstract and irresponsible *generalisation* to a more concrete or responsible one. Any general law, *before* we admit that $S$ is really a case coming under it, is to that extent indefinite; if the case $S$ be found to disagree with it, we may still retain the law as uncontradicted by facts. But after we have elected to assume that $S$ comes under the law, this is no longer possible. Assuming that $S$ comes under the law '$M$ is $P$', and also that such law is true in its more indefinite interpretation, this does not prove *except verbally* that $S$ is $P$; we have first to know whether the assertion that $M$ is $P$ can be really maintained

when $M$ is so defined as to include $S$. This is the leap that is tacitly made by the restriction of the general law to its use as an actual major premiss, and it is often both plausible and erroneous. For instance, it is true in the abstract that the same cause will always produce the same effect; and yet it is notoriously easy to find examples where, if we assume two events to be the same, we cannot safely apply the rule. The rule must then either be made less abstract and more difficult to accept,—as by some attempt to define what constitutes 'essential sameness' for this particular purpose, or else we use it at a certain risk. The difference between a careless and a careful Logic consists in getting free from the bondage of the merely verbal syllogism and doing what we can to make the premisses definite enough to suit the special occasion.

Or again, sometimes the prominent feature is the change from a less definite to a more definite predication. A predicate, $M$, may be generally applicable to $S$ and yet perhaps not so when it is definitely made to indicate $P$. Assuming that '$M$' does indicate $P$, and also that the assertion '$S$ is $M$' is true in its more indefinite interpretation, this does not prove (except verbally), that $S$ is $P$; we have first to know whether '$S$ is $M$' can be safely maintained when $M$ is so defined as to indicate $P$. This is the leap that is tacitly made by the restriction of '$S$ is $M$' to its use as an actual minor premiss. For instance, if we assume the principle that Hume's doctrine (or Hegel's) is exploded, we must be more careful in classing such and such a writer as a disciple of Hume (or Hegel) when we make this classification a minor premiss to that major, than when we are merely making the classification loosely with a view to possible future uses in general. It may be *true*, loosely speaking, that a writer, $A$, is a disciple of $B$, and also that $B$'s doctrine is out of date; and yet when we put these separate items of information together and form premisses from them (e.g. '$A$ is a Hegelian: Hegelians are wrong') our conclusion may be false because we have taken the predication in this particular case too seriously.

The process may, then, be generally described as follows. To change two propositions, independently believed, into connected premisses is (so far as the conclusion is disputable) to render one or both of them more *definite* than before. Where this actually occurs, a risk is run, of which any careful Logic is bound to take account. In proportion as the conclusion is plausible, the risky assumption is well concealed; in proportion as the conclusion is disputable, the risk is real and important. The main task for the more accurate Logic is to look behind merely verbal conclusions to the facts which the words attempt to express. It is, indeed, solely on this account that strict

definition has any importance. If we were never going to *use* our items of information for justifying particular conclusions, it would not matter how vaguely they were conceived and expressed. As it is, we need them now in one context, now in another, and the degree of definiteness required varies with the special context.

The weak point of any syllogism, then, is the chance of *ambiguity* in one or both of the premisses. Such premiss may be true in one sense but not in another; true when left vague enough, false when made more definite and tied to a particular use. On this account the search for possible ambiguity is one of the chief operations in the search for truth, and a knowledge of the nature and effects of ambiguity is one of the most pressing requirements of Logic. The more careful, and the more needed, our Logic is, the more it has to concentrate its efforts in this direction. Disputable questions are interesting only so far as the erroneous answer wears a plausible air. With so many enticing glimpses of difficult truth all round us, our critical interest is attracted away from the more obviously foolish end of the scale of assertion—such as the doctrine that the Earth is flat—towards those assertions which seem to miss truth by a hairsbreadth which makes all the difference. The error that is in appearance nearest to the truth is the error that gives most trouble; and hence wherever doubt and dispute are keenest there precise definition of the notions used is most important. We require the power of discovering unsuspected ambiguities; of dividing meanings into two, and seeing one of them as making a premiss in a certain context false or doubtful.

And hence it is that the distinction between 'descriptive' and other names is so important. For only descriptive names can produce ambiguity, and they always run the risk of it. It is necessary therefore to know exactly which names are descriptive, in order to distinguish as fairly as possible between the relevant and the irrelevant enquiry after a definition. That is why it is worth while to look behind the rough grammatical account of the matter which is all that Formal Logic has to give. There is one sort of name—but it is not exactly a 'general' name—which must be defined on demand; and there is another sort of name—but it is not exactly a 'proper' name—which need not be defined. It is because the old distinction is only roughly applicable to names as used in asserting, that where accuracy is important we are compelled to distrust that distinction; compelled to regard it as a clumsy attempt to recognise a difference which admits of being recognised in a more effective manner. What we need, in practice,

is to make sure that we are not wasting trouble, and raising false issues, by pressing for the definition of a name when it is used otherwise than descriptively; nor seeking to evade the relevant question how a name, when used descriptively, is intended to be defined.

§ 8. The foregoing view of the syllogism helps us to see two things about the nature of descriptive names. First, that it is only as antecedent or as predicate (and therefore only as middle term) that any name can be descriptive; and secondly, that to regard any name, used in a proposition, as descriptive, is to regard that proposition as a premiss and so to have in view a particular conclusion which it supports. Apart from all reference to a particular conclusion, there is no relevance in requiring the definition of any name, and the enquiry is always limited by the need for justifying the conclusion in question.

These two points are so closely connected that they may be called different aspects of the same truth. As regards the first, taken by itself, there is not much more to say. We have seen that in every premiss one term is emphasised and the other not. It is this emphasis which makes a term descriptive. In the minor premiss it lies on the predicate, in the major premiss on the (real) antecedent, and consequently in the syllogism as a whole on the middle term. This does not mean, of course, that the outer terms of a syllogism—the terms of the conclusion—cannot *have been*, or cannot *become*, descriptive; but they can only become so when we regard the conclusion as itself a premiss in a further syllogism. As a conclusion, its aspect as a premiss becomes for the time irrelevant.

The second of the two points above-mentioned is the one which has most practical importance. The demand for a definition is always so easy to make, and (apart from reference to a conclusion) so impossible to satisfy, that the quibbling art of confounding believers is hardly beyond the reach of any ingenious child. In consequence the legitimate demand for a definition suffers from an undeserved discredit; and the pretentious oracle, or shifty assertor, makes the most of this discredit, for his own purposes. Against both opposite kinds of quibbler alike—the sham destructive and the sham constructive—the plan of referring all definition to a purpose for which it must be sufficient is the best safeguard attainable. What chiefly hinders its application is the barren formality of our traditional Logic.

For, in addition to all the misleading views already noticed, and partly in consequence of them, the very nature of ambiguity, and the distinction between it and mere indefiniteness, is as a

rule left fatally obscure. Either little or nothing is said about it, or else (what is worse) names are formally divided into *equivocal* and *univocal*, and we are supposed to know by a sort of instinct which names are which, and, having once decided in a given case, to be safe in assuming that context makes no further difference. The notion that *any* names are univocal (except when they are not descriptive), or even that any are so nearly definite as to be safe against ever producing ambiguity, are errors which play into the hands of the shifty assertor; while the notion that if a name has meaning we may always raise difficulties about the precise limits of such meaning plays into the hands of the falsely obstructive critic.

It is never the mere *indefiniteness* of a name which gives the critic the right to demand a definition, but only such indefiniteness as produces an actual *ambiguity*, and this has nothing to do with the amount of indefiniteness concerned. To speak of names as *being* ambiguous is misleading; names may *produce* ambiguity, but it is only assertions—that is to say, names in a context—which can be ambiguous. And for an assertion to be ambiguous is simply to leave us in doubt whether, when it is regarded as a premiss, it is supposed to justify a particular conclusion or not. The controversial demand for a definition is always a quibble unless it is a request for the removal of an ambiguity,—unless, that is, the assertion is regarded as a premiss, and the word to be defined as the middle term of a syllogism. If a word in a context produces no ambiguity, the enquiry after its definition is irrelevant, but if it does produce an ambiguity then, no matter how definite it may be in the majority of its other contexts, some further explanations are imperatively required.

I say 'imperatively', because the effect of ambiguity is not merely to spoil some ideal perfection of meaning which a pedant may stickle for, or a sophist make a point of demanding, but to destroy just that practical meaning or value which every assertion worth the name is bound to have. The common tendency to identify quibbling with the demand for definitions, rather than with the shifty avoidance of that demand, is a natural consequence of the fair-weather view of Logic. When we confuse indefiniteness with ambiguity, and isolate words from their context, it is almost inevitable that we should think of ambiguity as a *greater or less interference* with meaning, and as not worth troubling about when the words whose definition is asked for seems on the whole to be fairly definite,—definite in the majority of contexts. Besides, it is obvious that meanings *are* sometimes partly but not completely understood; and on the surface it looks as if our doctrine that the smallest ambiguity

destroys every vestige of meaning came into conflict with this undeniable fact.

No great subtlety, however, is needed to effect the reconciliation. An assertion partly understood is an assertion only part of which requires to be further explained. The part which is understood need raise no question. Of course, when the critic commits the blunder of professing not to understand that part which he does understand, he is merely a quibbler. But equally so is the assertor who pretends that, because an assertion is partly understood, no one has a right to feel any further difficulty about its meaning. It may be natural to suppose that everyone who complains that he cannot understand us fully does so through mere perversity and pretence; but it is also unreasonable. An assertion only part of which is understood is not understood as a whole. As a whole, therefore, it has no existence at all for the audience in question. The meaning of a total assertion, like the strength of a total chain, depends upon that of its weakest part. It is not only books, or systems, which are made up of many parts, but every 'single assertion' is so too, and its parts are also assertions. That is to say, it is always possible to find two meanings in an assertion, and to raise the question whether it is true in both of them or only in one. When a critic finds an assertion ambiguous, this does not mean that he finds no part of it which he can understand, and even agree with, but that because he does not know whether this understood part is or is not intended to be the whole of the assertion, the assertion as a whole is for him as yet non-existent. As a whole, he can neither accept it nor reject it, till he learns what the whole of it is intended to be. Ambiguity occurs where, and only where, we find an assertion admissible in one sense and false or doubtful in another. The mere recognition of two distinct meanings does not by itself constitute an ambiguity; but there must be a consequent difficulty in deciding whether the assertion *as intended* is true or false, and a consequent need for a clear declaration which of two senses the assertor really intends. In the absence of such a declaration, no matter how slight be the indefiniteness which brings about the condition of things, it forms (so long as it lasts) an absolute bar to the existence of a meaning.

And the plea that strict definition is always impossible will not excuse the assertor. He is not asked to do more than to declare whether he himself intends a certain meaning or not. He is not asked for a perfect definition of the word, nor even for the best available compromise, nor is he asked to decide a question of general usage. The whole trouble of the enquiry is undertaken by the critic, who splits the vague assertion into a

part which may pass as true, and a part which he wishes to challenge; and it is only the assertor anxious to shift about between a safe and an unsafe meaning who can be interested in evading the question.

For simplicity, I have imagined the assertor and the critic to be two different people. But it would be an entirely needless limitation of the use of these truths, to suppose that they apply only to controversy. One may play the part of critic to one's own vague beliefs, and one may—from very various motives—seek to stifle one's own enquiry into their precise meaning. The fact that we all often adopt the latter course should serve to remind us that it argues no very desperate dishonesty. It is rather the instability of the position, than its moral significance, that is of interest to Logic. When we clearly see the reason of its weakness, we shall be led to cast about for stronger ways of justifying belief.

ALFRED SIDGWICK.

## II.—THE INTEGRATION OF MIND.

By Edmund Montgomery.

What we perceive, all, in fact, we are in any way aware of, has only momentary existence. This not, as may perhaps be thought, in the sense that the next moment it has become transformed into something else; but in the unambiguous sense that it ceases to be anything whatever.

This utter evanescence of all that appears to us in time and space contradicts flagrantly the fundamental maxim, that nothing in existence can ever be brought wholly to naught, that complete extinction of what was once in existence is inconceivable. Yet no fact in nature is more certain, or of more frequent occurrence. Total annihilation from moment to moment is what actually takes place in the world we are conscious of.

All through life the conscious awareness of ourselves and of things in general fills only that single moment of duration we designate as "the present." Whatever has made up consciousness the moment before has, as such, for ever vanished out of being. And whatever content may rise into conscious existence the following moment is evidently as yet non-existent. What we are conscious of as existing, our own selves and the world perceived by us, is in verity, all in all, a constant creation fashioned out of precisely such stuff as dreams are made of. And who will seriously maintain that dream-pageantry has any sort of permanent existence?

Of course, something inside and outside of us seems, nevertheless, in some way identically to endure. But this is certainly not something ever forming part of what is consciously present to us. At present, for instance, I perceive a window through the interstices of whose shutters sunlight is streaming into the room. Closing my eyes the very same perceived window—technically called an after-image—remains distinctly visible. Soon, however, it fades, and, at last, vanishes altogether. Who can deny that this special perceptual object has dwindled for

ever into nothingness? Reopening my eyes, what is generally taken to be the same window is again perceived. But, surely, the window I now perceive, the window now forming part of my conscious content, cannot possibly be the same window that had completely faded away as a conscious existent after I had closed my eyes a little while ago.

In exactly the same manner the entire content, which makes up consciousness at any given moment, vanishes the next instant, irreparably, into non-existence.

Should at any future moment some apparently identical constituent of consciousness rise again into present awareness, it can nevertheless in nowise be the identical constituent that was present before, but must of necessity be newly produced. The apparently identical window consciously present to me on reopening my eyes was in reality an altogether newly produced perceptual object.

How produced?—This exactly is the burning question the widely disparate answers to which are dividing thinkers into essentially opposed schools of thought. That much, at least, is certain: our entire life-experience, all we have ever felt and seen, is never otherwise consciously present to us than only as an ever-renewed creation, condensed into transitory moments of simultaneous awareness.

To conceive, as is often done, the succession of such moments of awareness in the likeness of a thread, a stream, a series of conscious states, is to overlook completely their evanescent nature. A strange thread this, having next to no length, the one end of which vanishes the moment after it has been spun from out some invisible source of supply, and the other end of which has to be made out of material not yet in existence.

Our moment of conscious awareness, never identical, but constantly reproduced, if it adequately contained the totality of possible experience, instead of consisting merely of its most partial and remotely symbolical representation; and if it unremittingly endured, instead of emerging in casual and fitful glimpses; then such permanent totality of conscious content would indeed constitute what philosophers have conceived as the "eternal now," the all-comprising "*punctum stans*" of being.

Even then, enjoying such phenomenal omniscience, we should feel compelled to enquire after the hidden source of emanation which was creatively underlying this ever renewed totality of conscious awareness[1]. Pure philosophical Pheno-

[1] Idealists who believe in no other than mental subsistence, and who with Berkeley postulate a supreme Mind as originator of our compulsory percepts, and as real container of the perceptual objects, lose sight of the

menism proves itself all too shadowy to its own votaries. They likewise assume some kind of noumenal matrix.

In fact, the most momentous problem offering itself to philosophical contemplation is and has ever been that of the veritable nature of the matrix of our revealing consciousness; the matrix of those partial and fitful glimpses which constitute the awareness, recognition and recollection of self and of things in general.

How does conscious experience, gathered piecemeal and erratically in the course of life, become so integrated in latency as to form a more or less systematized potential totality, the integrant constituents of which are ever ready, when occasion occurs, to emerge duly ordered into present awareness? How, for instance, are specifically disparate and successively experienced sense-affections welded into what eventually emerges as self-rounded perceptual objects? How does the time-scattered recognition of our potential endowments become unified into the abiding conviction of our being their bearer, of our being ourselves permanent, identical beings? How, in fine, can an epitomized remembrance of the vanished sensations, perceptions, emotions, thoughts and volitions, that have gone to make up our life-experience, become present in future as simultaneous content of our moment of conscious realization[1]?

The conscious states being, as such, utterly evanescent, cannot possibly themselves afford a permanent substratum for the latent integration they manifest. And, being utterly forceless emanations of the present moment, they cannot lend themselves to any quasi-mechanical interpretation of their connections with such conscious states as have been experienced in the past, or with such as are going to be experienced in the future. Suchlike associationist or Herbartian theories can have

all-important fact, that the conscious states composing what is called our mind have as such no power whatever to impress other minds. Now, as we have evidently actual experience of mind only as our own conscious states, and as these have no power to impress other minds, it is clear that an hypothetically postulated supreme Mind cannot be legitimately deemed to have power to impress our own or other minds.

[1] It will be remembered that J. S. Mill, after having made unimpeded headway with his combination of sensations and permanent possibilities of sensations, struck what he calls a "final inexplicability" in the composition of our present awareness out of experience mostly gathered in the past. He says: "The true incomprehensibility perhaps is, that something which has ceased, or is not yet in existence, can still be, in a manner, present; that a series of feelings, the infinitely greater part of which is past or future, can be gathered up, as it were, into a single present conception, accompanied by a belief in reality." The evident conclusion is that something different from the present conscious content must be the bearer, integrator and realizer of experience as past, present and future.

validity only as a figurative expression of laws referring to an integration established somehow outside consciousness, and only vicariously manifest in the synthetized constitution of our present moment of awareness[1].

Having no other data to draw conclusions from than what we find present in our moment of conscious awareness, the question of questions is: can we legitimately infer therefrom the existence and characteristics of what in reality underlies the integration of conscious experience? Can we form any valid conception of the extra-conscious substratum in which conscious experience, gathered in transitory moments as evanescent fragments, is nevertheless in some latent manner preserved and permanently systematized?

It is an obvious and incontestable fact, that, however rich in experience, however exclusively all-revealing our moment of conscious awareness proves to us individually, none of its contents, none of its feelings, its sensations, perceptions, volitions, emotions, and thoughts, have, as such, the least power to affect other beings. We do not perceive one another's conscious states, one another's mentally constituted awareness. If we consisted really of nothing but such stuff as consciously appears, we should be wholly imperceptible to one another. And if

[1] Conceptual Transcendentalists of the purely idealistic cast seek to explain the "final inexplicability" of the integration and permanency of what proves to be our latent store of experience, by resolving our seemingly most fundamental endowments, our body together with our volitions, sensations, perceptions and emotions, into a mere partial and inadequate recognition of a pre-existing totality of being. To this totality of being, which they conceive as the sole reality-constituting agent, they give the name of "reason" or "intelligence."

To account for the absence in present consciousness of most of the constituents, which from time to time compose the sundry moments of awareness of us numerous bearers of various consciousnesses, they have to postulate an "universal Intelligence," in which a sempiternal totality of being abides. All reality, our own being included, would then form part of such universal reality, and our individual consciousness, indeed that which individuates and alienates our own being from universal reality, would then consist altogether in the inadequate recognition of such reality.

The leading conception of this idealistic philosophy is the identity of being or reality with adequate thought; thought cleared of all sense-apparent entanglements; cleared, in fact, of all its time-and-space-implications.

We, and the rest of us, body and mind, would thus exist only as inadequate thought-fragments of universal thought, excluded in some inaccountable way from full participation in the perfection of eternal being. Under this aspect the seeming integration of bodily life in past ages would be the result of individual sense-deception, and the seeming integration of individual mind only a progressive recognition of the fully integrated universal Mind.

things in general consisted really of what was forming the awareness, or the ideal outcome of mental activity on the part of a supreme intelligence, they, analogically, would likewise be wholly imperceptible.

It is, however, most certain that we are perceiving very distinctly one another's being, and in the same manner things in general. That which is thus perceptually recognised by us, that which makes itself thus forcibly known to us, must therefore be something differing *toto genere* from our forceless, non-perceptible mental awareness and recognition. That which forcibly arouses in me the perception of your body is certainly not anything which ever forms part of your consciousness. When you yourself casually perceive this or that part of your own body, these casual percepts of yours have not the least power to affect my perceptual sensibility. That which has such power, that which arouses in me the percept I call your body, is therefore something possessing a non-mental nature, something having extra-conscious existence.

These obvious considerations seem to furnish a valid philosophical proof of the subsistence of a perceptually revealed realm of extra-conscious, force-endowed existents. And it stands to reason that the distinguishing characteristics of our forcibly aroused percepts will symbolically reflect corresponding characteristics of the extra-conscious existents, through the specific influences of which they are aroused.

Let us then see, whether characteristics of our perceptually revealed body or organism afford us information regarding the latent, permanent integration manifest in the evanescent conscious content which makes up our moment of mental awareness.

Here, in order to account for the inadequacy of our knowledge of the sense-revealed world, we have to realise how remotely and superficially symbolical of the symbolized extra-conscious existents our perceptual recognition of things must necessarily be. Our most highly integrated, and therefore most comprehensively revealing percepts, are those of sight. Yet these consist of nothing but definitely shaded and coloured space-perception. And the extra-conscious existents symbolized thereby manage to reveal their, for us, characteristic distinctions through nothing but slight variations of activity induced in an intervening medium, through whose vicarious activity our visual sensibility becomes eventually specifically affected. How can we expect that these shaded and coloured perceptual objects of ours, and the shiftings or so-called motions occurring in and among them, can possibly furnish adequate knowledge of the veritable nature of the extra-conscious existents, through

the specific activities of which those conscious phenomena are aroused in us?

Yet crude materialism takes that which constitutes these evanescent perpetual objects and their motions to be the sole ultimate and indestructible world-material. And crude idealism goes a step further by instituting as such, elementary sensations, instead of elementary perceptions. Where, we may well ask, in a world composed of nothing but aggregated elements, can the unitary feeling and perceiving being be found?

The manifold suggestions of other than visual experience, conveyed by shaded and coloured visual forms or objects, prove to be indicative of characteristics of extra-conscious existents not immediately aroused by them, such as distinguishing touches, tastes, smells and sounds, and moreover all scientifically established experience connected with them. These instructive suggestions, forming part in immediate presence of the manifest integration of a vast amount of past experience, whence do they issue into conscious awareness? Can they well emanate from any other source than that which is perceptually revealed to us as our bodily organization?

It cannot be denied that there exists the strongest *primâ facie* evidence, that conscious states are an outcome of the activity of that which becomes perceptually revealed as brain-structure. The strict dependence of special conscious states on the activity of special regions of brain-structure is clearly demonstrated by physiological and pathological psychology. Indeed the great science of physiological psychology lets itself be guided throughout by the fundamental belief that perceptible sense-stimulating and sense-stimulated agents really exist; that the former have power to affect the organic sensibility of the latter, thus arousing representative percepts in their conscious content; and that definite modifications of the sense-stimulating activity are followed by definite corresponding modifications of brain-reaction, and therewith of conscious content. And not only in everyday life are we guided by the same belief; but all physical science rests on the supposition that definite modes of sense-stimulation arouses definite perceptual responses.

Why then are we nevertheless so reluctant to accept this seeming dependence of conscious states on brain-function and sense-stimulation as final truth? Why is the precise relation obtaining between conscious states and the underlying brain-activity so perplexingly obscure? Why do conscious states and functioning brain-structure seem such utterly disparate modes of existence, standing in no possible causal relation to each other?

The truth is, that, instead of being of an entirely different nature, functioning brain-structure and the conscious states seemingly connected therewith are altogether of the same consistency. They are both mentally constituted existents, both composed of the same mental or conscious stuff. What I consciously realize as functioning brain-structure is evidently a percept of my own, something forming part of my own consciousness, and therefore a conscious existent just the same as the other conscious states somehow connected with it.

Of course, nothing of mere conscious consistency can possibly originate any other conscious existent. Should I, for instance, perceive your brain in functional activity, this percept of mine could not possibly be the cause, the originating agent of the conscious states you yourself are simultaneously experiencing. But there is no obvious reason why the only vicariously and symbolically known existent, the activity of which is arousing in me the perception of brain-structure in functional activity, should not simultaneously emanate the conscious states you are aware of. While you are thus experiencing flashes of conscious self-illumination, the permanent, extra-conscious existent from which these emanate becomes perceptually revealed to me.

Such, indeed, would seem to be the real connection obtaining between those apparently incommensurable modes of existence called respectively functioning brain-structure and conscious states. The specific activities of extra-conscious existents stimulate in definite ways the organic sensibility of our own extra-conscious being. This specifically attuned action and reaction it is which gives rise to the corresponding conscious states.

The by no means far-fetched epistemological theory here iterated finds corroboration in the fact, that the permanent extra-conscious existent, on the functional activity of which conscious awareness seems to depend, retains the power to arouse its representative perception in beholders when functionally at rest, in which case its individual bearer is not experiencing any conscious awareness. Consciousness, emerging thus solely under the functional activity of what is perceptually realized as brain-structure, seems to be therefore exclusively an outcome of it.

We may then legitimately infer the existence of a relatively permanent matrix, from whose functional activity—symbolically signalized to us as definite perceptual motions—our evanescent conscious awareness emanates. This being the case, we may possibly by dint of characteristic perceptual signs gain some information—however symbolically inadequate—of the means

through which the permanent integration of successive experience is wrought within this relatively permanent, extra-conscious matrix.

In the ascending animal scale the developmental history of what appears to us as cerebral structure seems in all reality to coincide closely with the developmental history of what we call "mind." The same organic process, through which the progressive development of brain-structure is achieved, implies a corresponding progressive integration of mind. Central nerve-structure—understood of course as the extra-conscious existent merely perceptually revealed as such—may in fact be regarded as that which directly underlies integrated mind.

Considering, furthermore, the numerous and highly important sub-conscious mental processes, indicated in results apperceived within the conscious content of the experiencing subject, or perceived merely as purposive movements by beholders without any corresponding conscious awareness on the part of the subject executing them; considering this actual state of things, central nerve-structure may indeed be regarded as veritable mental structure; the structure in whose marvellous intricacies of minutest organization the complexity of mind latently abides. Its moment of conscious awareness emerges then as a ready outcome of the structurally pre-established and integrated summary of scattered experience, and, may be, moreover, as the final resultant of ever so much sub-conscious activity.

New modifications of brain-stimulation, giving rise to corresponding modifications of conscious content, will work specifically characteristic increments of change in the brain-structure. In future, when the newly attuned structure becomes again in any manner stimulated to functional activity, the corresponding modifications of the conscious content will emerge more or less distinctly. In this faithful retention of structural modifications, and corresponding function, consists most likely, as often pointed out, the proximate organic foundation of what is called memory.

This organic view of mental integration being perchance granted, it will still be rightly objected, that the identical subject to whom all experience accrues, the subject who feels, perceives, remembers, recognizes, discriminates and wills, that this all-realizing and aimfully executing subject has yet been in nowise accounted for.

It was the failure on the part of Nominalistic Idealism, or the sensation-philosophy, rationally to account for the all-realizing subject, that has offered the principal point of attack in the war so resolutely waged by Transcendental Idealism

against all manner of suchlike mental atomism. By denying altogether sense-derived mental integration, and delegating with Kant all synthetizing power to an imperceptible principle called "intelligence," Transcendental Idealism was led with logical consistency to resolve all perceptible reality into inadequately synthetized and therefore illusive mental fragments of an eternally pre-existing intelligence.

The kind of evolution that Transcendental Idealism boasts of having taught long before naturalists became convinced of progressive development, would indeed be evolution in the true sense of the term; namely, a process rendering gradually explicit what was already implicitly contained in a pre-existing totality of being. This sort of evolution however in no way resembles the so-called evolution manifest in perceptible nature. It is by no means a structural development of real existents taking place in our time-and-space-world; but simply a progressive recognition on our part of eternally perfect being conceived as universal Intelligence.

Now, although our appreciation of periods of time, occurring as it does within our present moment of conscious realization, is altogether a mental or ideal reconstruction; yet, as we are in possession of sufficient proof of the real existence of sense-stimulating agents, and their reciprocal relations, our ideal reconstruction receives thereby its objective verification and validity. Our estimate of lapsed time reflects thus some kind of corresponding occurrence in extra-conscious nature. And organic development, with which mental development is found to keep equal pace, proves then to be in all verity a most gradual and toilsome process of new formation. To view the multitudinous, time-scattered traces and results of inorganic and organic development as a mere illusion of sense, caused by the inadequate recognition of the veritable nature of an imperceptible Intelligence, seems to unsophisticated judgment in the highest degree fantastic.

On the strength of biological researches, the main results and direct philosophical implications of which may be found expounded in former Nos. of *Mind*[1], the essential individual unity of organic beings, even of the most highly organized, was insisted upon. It was shown that organic complications, far from resulting as an outcome of the aggregation of a multitude of elementary lives, such as visible cells and hypothetical plastidules, physiological units, biophores etc.;—that these sense-apparent complications have accrued throughout the scale of

[1] *The Dependence of Quality on Specified Energies*, Vol. v. p. 1. *The Unity of the Organic Individual*, Vol. v. p. 318. *The Substantiality of Life*, Vol. vi. p. 321. *Are we "Cell-Aggregates"?* Vol. vii. p. 100.

animal development as the structural elaboration of an indiscerptible being. This organic unity of the morphologically complex individual has since been more or less fully recognized by leading biologists.

In contemplating the relation of conscious awareness to the organic being, it will be well to begin with primitive forms of life, such, for instance, as infusoria. An infusorium, as a unitary being, evidently feels certain functional modifications of its structure. It is, no doubt, a being endowed with a primitive mode of feeling. The question is: what nature does the matrix of this feeling possess? Or, otherwise expressed, what kind of consistency has the permanent being who experiences this feeling? Is it likely that the feeling or conscious awareness inheres in a being of an altogether different nature from that perceptually revealed to us as the organic structure of the infusorium? Is it likely to inhere in a wholly imperceptible agent connected in some mysterious way with the visible organism?

Few thinkers will be found ready to attribute a dual nature to these primitive beings. Yet, if the dawn of consciousness rises as functional outcome of their perceptible structure, and not as the manifestation of a separate mental entity merely inhabiting and actuating it; then, consistently, highest modes of consciousness must be likewise the outcome of the perceptible structure of their individual bearers.

Indeed, why should not the extra-conscious existent, whose activity has power to arouse in us the percept we call its functioning structure, have also power to arouse in itself a corresponding conscious awareness? The nature of the extra-conscious power by means of which it compels in us the awareness of definite percepts is no less enigmatical, than the power through the efficiency of which its own modes of mental awareness emanate. There seems, in fact, no valid reason why we should not view the living, indiscerptible individual as a being that by dint of its peculiar constitution, perceptually revealed to us as its organic structure, is in all verity endowed with feeling or mental awareness.

This granted, the rest is only a matter of developmental detail. Indiscerptible organic beings, as extra-conscious existents, are themselves the feeling, perceiving, thinking and willing agents, the bearers of all conscious awareness, and the performers of all volitional actions. Their volitional actions become consciously manifest to themselves as what is figuratively called their mental activity, and perceptually manifest to beholders as their purposive movements.

In conscious awareness there is not, as Kant believed, first

an influx into empty time-and-space-perception of an unsynthetized and passive chaos of sense-affections, and then an outgoing synthetic activity on the part of the affected subject's intelligence, welding the confused and meaningless sensorial *congeries* into integrated and significant conceptual order. The volitionally apperceiving, attending, remembering, recognising, discriminating subject's organically integrated mental experience becomes at times partially aroused by means of appropriate stimulation. And by dint of his command over his so-called voluntary muscles, and therewith over the direction and tension of his sensory organs, and organs of linguistic expression, he is enabled to select and intensify consciousness-arousing influences, and control the duration of their specific stimulation.

When a sensation is felt, it is the indiscerptible organic being who feels it. It is the same being who perceives whatever percepts are present, who experiences whatever emotions are aroused, who conceptually apprehends and volitionally executes.

All complexity of structure, mental structure included, and, therewith, all mental integration has in the course of phylogenetic development been built up within the indiscerptible living individual as specialized modifications of his own unitary self. His conscious awareness, whether aroused from without or from within, is awareness of a stimulated fragment of his own structurally integrated mind.

The fundamental perplexity, regarding that which underlies the unitary consciousness of the organic being, arises when its structure is viewed as consisting of a multitude of merely aggregated molecules. Then, indeed, among these many inferior structural units the indiscerptible being can nowhere be found. The truth is, the entire being, as perceptually revealed, consists of one single structural unit, all parts of which are interdependently connected as integrant constituents, and are interdependently functioning as organized means belonging to the individual as an indivisible whole. The feeling of this being is not a composite of the sundry feelings of separate molecules, nor is it made up of self-existent mental elements, but is simply the endowment of the indiscerptible organic being. And its aimful movements are not the outcome of the automatic beats of its sundry cilia, or of the automatic contractions of its sundry muscular fibres; but are voluntary actions of its own, due to its being organically endowed with the power of self-movement.

The endowment of primitive feeling and volition, belonging to organisms but slightly differentiated, affords the original matrix, into which by means of developmental modifications

and specifications the complex integration of mind is gradually wrought.

The original self-feeling of an organism is no doubt subject to more or less pleasurable or painful modifications; the former, most likely, connected with the process of functional integration, the latter with abnormal disintegration.

Through differentiation and specification of the sundry sensory organs, and further qualitative specifications within these sundry sensory organs, the original self-feeling becomes, by means of correspondingly diversified and specialized sensorial and perceptual affections, more and more definitely informed of the presence and influencing characteristics of outside existents[1]. What, indeed, are touches, tastes, smells, sounds, sights, and their perceptual combinations, but specific modifications of self-feeling, serving as indications of the presence and characteristics of outside existents?

The appetitive cravings, such as hunger and sleep, are evidently connected with structural needs, with avidity for constitutive reintegration after more or less functional exhaustion. And the appetite of sex is fundamentally likewise an integrative avidity, as instanced in the fusion and unification of the material of primitive organisms during conjugation.

The more and more precise and comprehensive recognition of beneficial and hurtful influences is obviously of primary importance to the welfare and development of the organic being. And it is on recognition or apprehension of the approach of pleasurable or painful influences that the so-called emotions are roused. Emotions are thus the outcome of organic reactions on apprehension of fruition or danger.

[1] Surely, specific sensorial awareness can only be an outcome of the specific functional energies of respective sensory structures, central as well as peripheral. The specific energies of the sundry senses actually experienced in individual life have evidently been established in the course of phylogenetic and not only in that of ontogenetic structural differentiation and elaboration of the central sensory structure. The perfect mimicking of sensorial and perceptual experience on the part of dreams proves the specific sensory constitution and latent mental integration of the structure composing the central organs. So complete a functional specification and systematization cannot well be the result of a mere difference of peripheral stimulation applied to a functionally indifferent substance, or to one that had been specifically differentiated only during individual life. This would in fact amount to an omnipotent potentiality of the sensorially reacting substance throughout its entire extent. Some of our most intense and specific sensations are experienced at once fully developed, without any previous possibility of ontogenetic differentiation and elaboration. And the all but perfect sensorial and perceptual equipment of many animals at birth goes likewise to prove inherited specific energies of the structures underlying mental awareness.

Tender affections spring first only from conjugal or parental relations as outcome of the direct complemental nature of the affected organisms. They become gradually extended to more distant degrees of relationship under community of interests and concomitant widening sympathy. This development of super-individual or social interests finds its culmination under a rational comprehension of the organic, yet transcendental, solidarity of humanity at large, past, present and future.

The development of the volitional or executive functions of the organic individual keep pace with the development of his apperceptive and self-recognizing functions. And with the growing recognition of his super-individual or social nature coincides the development of his ethical propensities.

Organic development, then, consists essentially in structural specifications wrought within the indiscerptible living individual. Developmental complications of his conscious awareness are, in truth, specifications of the original unitary self-feeling. And his so-called volition has its being in a more or less complete and specialized control over the function of the organs connected with his life of outside relations.

Mental integration, the culminating achievement of organic development, is brought about by the structural retention and unification of modifications wrought in the substratum underlying self-feeling, through interaction with the environment during phylogenetic evolution.

## III.—GNOSTICISM AND MODERN PANTHEISM.

By Professor G. J. Stokes.

The ultimate problem of all thought is the relation of the Finite to the Infinite, of the Universe to the Primal Source of Being, from Whom all existence proceeds. Our conception of this relation depends upon the idea which we form, not only of the Finite, but also of the Infinite. In the ancient world it was man's idea of the Infinite, his view of God, which determined the way in which he conceived the transition from God to finite things. His conceptions regarding the Finite were dependent on his conception of the Infinite. If with the Jew he conceived God as a Person and a Spirit, a Conscious Subject raised above the universe as its Ruler and Lord, he necessarily conceived the origin of the universe, as Creation, the fiat of an incomprehensible Creator. If, on the other hand, with the Greek philosopher, he conceived God as the Idea of the Good, as the One, as Pure Being, then he regarded all existence as but an efflux from the Divine Essence, the outflowing of Impersonal Reason into an alien system of things. The Jew sought the link between the Finite and the Infinite, between God and man, in personal, self-conscious, spiritual beings, in angels and prophets, and accompanying miracles, wonders and signs. To the Greeks, the universe itself was pervaded by a Divine life, and full of a manifold Divine presence, while the various grades of Ideal Being connected the Supreme One with the chaotic and phenomenal Many.

The Gnostic heresies of the second century present a strange coalescence and mixture of these two modes of thought. The Pantheism and Dualism of Greek philosophy are retained, but never overcome. Abstract existence is personified. Living Personality is merged in Impersonal Essence. God is conceived as the Unfathomable Abyss, as the Ineffable, the Nameless One; and a series of Powers or Æons, emanations of the Divine Pleroma, half personal half impersonal, mediate the

transition to the lower world of sense, where the Divine life comes in contact with the blind and lawless forces of the material chaos. Persons and Concepts, Symbols and Notions, Jewish Monotheism, Greek Pantheism, Oriental Mysticism here intermingle.

When the various attributes and relations under which the human mind conceives the Divine Nature are not viewed as inherently related to each other, they can no longer be apprehended as fused in the simplicity of the Divine unity, nor consequently in their true relation to the whole of things. The attributes of God become detached from each other and from their Divine principle; they assume a quasi-independence; they are interposed between the Creator and His creation, and the series of Æons are conceived as linked together by some loose ties such as "emanation," "dependence" or "development." —The effect is twofold: the Supreme Being, the Ineffable is robbed of his prerogatives, he becomes a mere name, empty of all content, meaningless, inaccessible; and the powers which rule the universe are not supreme. No longer viewed as distinguishable phases of a life which is really One and Indivisible, they are fantastically represented as separate beings. The problem with which Gnosticism had to cope, the reconciliation in a higher unity of Monotheism and Pantheism, Dualism and Monism, the idea of Creation and the idea of Development, was too great for it. The Divine unity broke up into a plurality of spiritual existences, denizens of the Unseen.

These *a priori* speculations, starting apparently from a fanciful analysis of the nature of the Deity, the modern mind is likely to regard with disdain. The tendency of modern thought is to explore the Finite and to ignore the Infinite. Modern philosophy either banishes God to the region of the Unknowable, or worships Nature instead. It offers us the choice of Agnosticism or Pantheism. But still we cannot escape the mystery of the Infinite. If formerly the view of God determined the theory of the world, now the theory of the world determines the view of God. Ancient thought passed from God to the world. Modern thought passes inevitably from the world to God. Thus even the Agnostic is led to maintain that we are "ever in presence of an Infinite and Eternal Energy from which all things proceed."

It is a consequence of this fundamental difference in the point of view that whereas Gnosticism arose from the difficulty of combining opposite and seemingly inconsistent conceptions of the Divine Being, the Gnostic tendency in Modern Pantheism arises from the difficulty of combining opposite and apparently

incompatible views of the universe. In modern philosophy when speculation ascends from the world to God, so long as the universe is conceived from a single point of view, so long as we hold that there is some "ultimate component of thought into which our conceptions of external existences are resolvable," we are not compelled to recognise in the Infinite Being diversity of content or plurality of attribute. We may believe in an Absolute Force as the necessary correlate of the force we know, or in an Absolute Thought as the essence and principle of things and still be far away from the problems of Gnosticism and the difficulties over which it stumbled. It is when we attempt to combine these views, to regard the universe as proceeding from Thought and Power, the genesis of things as at once real and ideal—in a word, it is when we seek to combine Realism with Idealism that the old-world difficulties recur to perplex the thinker and Gnosticism reasserts itself. For the universe can then be no longer comprehended under one formula nor regarded as the expression of a single principle. It is dependent in its origin, not only on Infinite Energy but also on Infinite Thought, and unless this Thought and that Energy shall reveal themselves as ultimately one, in the beginning of things plurality of condition and diversity of principle are recognised and the origin of the universe is traced to detached and semi-independent agencies. It matters but little how we conceive these agencies as connected or related—whether as emanations of an Abyss or attributes of a Substance—their living unity has disappeared. No longer viewed as phases and aspects of a Divine life, but falsely abstracted from each other and endowed with a fictitious independence, they represent only the failure of thought to apprehend that life which is One, Eternal and Divine.

Gnosticism places on the throne of the universe instead of Deity, the *disjecta membra* of Deity. The *Philosophy of the Unconscious*, of von Hartmann, supplies a striking example of this, in the Pantheism of the present day. Hartmann has attempted to reconcile Realism with Idealism, and to present us with a theory of the origin of things in which both modes of thought shall be combined. His metaphysic is an analysis based on science and experience, of the Infinite ground of Finite existences, and an investigation into the nature and connexion of the spiritual powers that control the destiny of the universe. The result is a philosophy presenting a striking agreement with the Theosophic systems of the Gnostics, proving that those systems were not wild fancies, but consequences of the inherent difficulty of the problem which Gnosticism vainly endeavoured to solve. In

truth, the attempt to reconcile spiritual existence with the Absolute and Infinite Power which reveals itself in the order of the universe, is equally difficult, whether we approach the problem from the side of the Finite or from that of the Infinite, from the standpoint of science or from the standpoint of Ontology. One thing is certain, modern science cannot evade the question.

The problem of philosophy has been in every age to determine the relation between Being and Thought, Subject and Object. Every philosophy seeks the common element, the unity, in this duality. We may seek this unity in the object-world or in the subject-world, in the Unknowable or in the Unconscious, in a Power or Force beyond the universe, or in a Thought above it. We may view thought as a phase of force, or force as an attribute of thought; things as proceeding from an absolute thinking or from an infinite and eternal energy. Hence the Absolute which lies beyond the antithesis of Subject and Object may be conceived after a twofold manner. On the one hand we may conceive the relation of Subject and Object arising as a mere modification within a wider field of objective existence, viewed as an omnipresent Force or Energy, pervading alike the matter and the form of consciousness. On the other hand, we may conceive the Absolute, in which this relation arises, as a Subject lying behind the antithesis of consciousness and its object. In English philosophy the Absolute has been generally sought in the Unknowable Power or Force, beyond the universe and beyond consciousness, which nevertheless permeates both; and in this point of view, thought, the final outcome of evolution, is a dependency of force. At the same time an inevitable tendency has arisen to spiritualise this force, to describe it as quasi-psychical; to endow it with the power and potency of mind, to see it in a dramatic tendency, even to view it as a directive agency. In German philosophy since Kant, the Absolute has been viewed as a Subject, or as an Absolute Thought, in which the distinction of Subject and Object is transcended. Things are here the creations of Thought; but already in Fichte, and still more in Schelling and Schopenhauer, the objective element of Force has been imported into the Absolute under the name of Will and regarded as fundamental. The problem is unavoidable. What are the relations between Will and Thought in the Absolute?

The philosophy of Von Hartmann is an answer to this question. His answer partakes of the common character of German speculative systems. He finds the unity of Will and Idea in an absolute Subject or Spirit lying behind and beyond the antithesis of consciousness and its object. This Subject, the

unity of Being and Thought, Matter and Mind, is for that very reason Unconscious Immaterial Impersonal Spirit. It is the ground of matter and of consciousness but is itself super-existent and super-conscious. Unlike the Absolute Idea of Hegel, and the Will of Schopenhauer, this Absolute is not one single principle. There reside in it two attributes, Will and Representation or Idea. What the Divine Essence is, over and above its attributes, does not appear. In that respect it is ineffable, mysterious. It is the bearer and support of the attributes. It unites them and renders their interaction possible. And that union, that interaction, constitutes the world of matter and of consciousness. Like its Gnostic fore-runners, the system of Hartmann is essentially Pantheistic. God is not the Creator of the world. On the contrary, all phenomenal existence is traced to a process of development which arises accidentally in the essence of the Absolute. This process does not produce but *is* the world. The world is simply the continuous manifestation of the Divine Essence. Not the activity of the Divine Essence but the Divine Essence itself is immanent in the world. The activity, on the other hand, *is* the world. The immanence of the Absolute in the world does not mean that it disappears or is exhausted in phenomenal existence. The world is finite. The Absolute, on the other hand, is infinite potentiality or potential infinity and so far transcendent. The Absolute is immanent only in regard to the reality produced.

In what manner the Absolute Subject combines the Attributes it is impossible to determine. To all appearance, it is simply an external bond that holds them together. They certainly are not inherently conjoined. According to Hartmann they stand in a relation of antagonism, of polar opposition to each other. Were it not for the identity of essence "it could not be seen how one should enter into relation with the other.....only the willing and representing are different, not that which wills and that which represents. The willing is without reason but the reason of that which wills, is just the Idea; the representing is without energy, but the force of that which represents is the Willing."

The meaning of this is clear. Idea and Will, the two fundamental functions of the Absolute, are absolutely distinct. Reason is impressed upon the Will from without. The Idea is devoid of all power within itself, and the channel through which they communicate, the identity of essence, *is in itself* destitute of Reason and Will. Only in the world are they united; out of the world their union is potential not actual. We must therefore distinguish in these attributes, the mode of their

existence prior to the world in their isolation and separation from each other, and that state of mutual interaction in which they are or constitute the world. The Will prior to the world exists in a state of rest, of mere potentiality, of "ability to be." The Idea, before its manifestation in the world, is in a state of "purely being." Some expressions of Hartmann's might lead us to think that by the Idea in this state, he meant a kind of ideal existence, stable, self-identical, in which all the wealth of ideal form existed already fully developed, and to which the Will has only to give "the emphasis of reality." Thus when showing that the thinking of the Unconscious is timeless, though still in time, he speaks of the world of possible representations as "ideal existence in the bosom of the Unconscious." Again, he speaks of this "resting ideal world of possible representations." His doctrine, however, really is that the Idea before the approach of the Will is a contentless "Formal Principle" which only upon contact with the Will develops a content. This sphere of pure possibility is only "formal predestination for the case of development." The content which it develops and which is realised in the world, is the material side, the Idea in the stricter sense. This content exists as a predestined possibility in the Formal Principle. The Formal Principle or Primal Reason itself is the principle of logical relation generally, and, when examined, turns out to be the old Law of Identity, and Law of Contradiction. Out of this meagre source it only requires the approach of the Will, to draw out the riches of the Ideal world. Notwithstanding his polemic against the Dialectical Method, Hartmann here comes very close to it.

Hartmann grounds his cosmogony on the mutual interaction of the attributes. The Will is active, the Idea passive. The first origin of things is due to the Will. To the Will he attributes the initiative. Not to the Substance or Subject that possesses the attributes, not to any action of the Idea either immediate or mediated by the Subject or Essence, but to the attribute Will *as attribute.* Suddenly, without rhyme or reason, it falls out of its state of repose as mere *power* or *potentiality*, and acts; and in the first place, it "wills to will." Once it has willed to will, the Will is no longer master of itself. It wills it knows not what; but the only thing for it to will is the Idea. The Will is the poor principle, the Idea the absolutely rich. The Will realises the Idea and is controlled by it: and this is the beginning of the world, in absolute unreason. The realised Idea is the finite world. The maniac Will seizes on the Idea, the result is the birth of things. The Will then experiences restraint imposed by the Unconscious in

its wisdom. In the Unconscious the Idea and the Will exist in inseparable unity, and the one cannot exist without the other. In the beginning, this seems to involve a circle. The representation can only pass into existence through the Will as act, but the act can only exist as definite act, which wills something, i.e. presupposes the representation. Hartmann gets out of this difficulty by assuming an "Empty Willing" a "Willing to will," which serves to evoke the Idea, and is an intermediate state between the Power at rest, and the definite act. The "Empty Willing" struggles towards being. It is not, but only becomes. The completed act is in the realization of the Idea. This empty Willing not only decides the beginning of the world; it also indirectly prescribes the goal towards which the Idea shall lead the world-process. This Empty Willing, simultaneous with the origin of things, is a state not of pre-mundane, but of ultra-mundane woe, which is the only consciousness possessed by the Absolute as such, that is, apart from finite individuals. To extricate it from this state is the aim of the process of development which goes on throughout the universe. The burden of existence is nothing but the effort of the Absolute to escape from its own misery. To the Idea is assigned the function of guiding the world-process by offering such a content to the Will, as may lead to the final emancipation of the Idea, and with it the annihilation of finite existence. The aim of the Idea is thus to circumvent the Will. This it does by creating consciousness, which brings about the relative emancipation of the Idea. But this is only a step towards its absolute emancipation, when a collective resolve on the part of all the conscious wills in the universe is to have the marvellous effect of causing the whole of existence to disappear. The end of all existence towards which duty requires us to co-operate, is to reduce the Will to absolute quiescence, to bring to pass *Nirvana*, to cause the universe to disappear, to effect the redemption of a suffering God. The collective resolve shall have an effect more wonderful than Prospero's wand.

> You do look, my son, in a mov'd sort
> As if you were dismay'd: be cheerful, Sir:
> Our revels now are ended: these our actors,
> As I foretold you, were all spirits, and
> Are melted into air, into thin air:
> And, like the baseless fabric of this vision,
> The cloud-capp'd towers, the gorgeous palaces,
> The solemn temples, the great globe itself,
> Yea, all which it inherit shall dissolve;
> And, like this insubstantial pageant faded,
> Leave not a rack behind: we are such stuff
> As dreams are made on, and our little life
> Is rounded with a sleep.

According to Hartmann, the life of the universe too is "rounded with a sleep." The great process of development in the Absolute, which is the world, is not directed to any *positive* end. Its own negation and with it the negation of all finite existences is that towards which it tends. The beginning and the end are thus the same. The origin, continuance, and destiny of the universe are dependent on an agency, in the abyss of whose being lie side by side, absolute intelligence and absolute unreason, blind force and clairvoyant thought.

The points of resemblance between this system and the Gnostic heresies are many and startling. Like Gnosticism, the Philosophy of the Unconscious represents an imperfect combination of detached elements of thought. Like Gnosticism too, this new philosophy has assumed a religious garb. In Hartmann's *Religiöse Bewusstsein der Menschheit* and *Religion des Geistes* we have precisely the same tendencies to unite with Christianity Oriental theosophy and Buddhism, the same effort to view the origin of the universe as a theogonical and cosmogonical process, to reconcile Monism with Dualism, Pantheism with the Christian principle, the same emphasis on the idea of Redemption—the same desire of the spirit for emancipation from earthly things, which characterised the systems of a Basilides or Valentinus. It has been said of Gnosticism that it was a grand anathema, hurled by man against creation. No words could more accurately describe the philosophy of modern Pessimism.

The Philosophy of Gnosticism was based on Plato. The Philosophy of the Unconscious goes back to the modern Plato —Hegel. The genesis of the universe from Thought, was the problem alike of Plato and Hegel. Both view the generation of things as a timeless dialectical process. But just as the Syrian Gnosis was dissatisfied with the Platonic conception of matter as mere negation or limit, so Hartmann is dissatisfied with the Hegelian deduction of the universe from Absolute Thought. It is hard to imagine the visible universe issuing out of the mere Idea, or to conceive a collection of categories, a cosmos of abstractions producing this real solid world. Hartmann therefore rejects Absolute Idealism and seeks in consequence some principle more substantial, more nearly allied to the real forces of nature than any dialectical process, in order to give the emphasis of sensation and fact to the shadowy abstractions of thought. This principle he finds in Schopenhauer. The force which we experience in ourselves as Will is identical with the force in nature. And this is no shadowy power. The will of man embodied in a movement of his arm or foot is able to effect a change in the situation and feelings of another, which

no timeless dialectical movement in the region of pure thought could ever accomplish.

Von Hartmann thus borrows from Hegel, Idea; from Schopenhauer, Will. These principles are no longer identified with the Absolute. They are degraded to the rank of attributes. But, except that the dialectical movement has disappeared from the Idea, they otherwise remain unchanged. This enables Hartmann to present his doctrine as continuous with the preceding philosophical development. At the same time, while arriving at similar conclusions, he professes to reach them by a very different method. "Speculative Results according to the Inductive Method of the Sciences of Nature" is his motto, and it is interesting to observe how he seeks to base his theory on the facts of modern science. According to Hartmann the Unconscious acts, or manifests itself in three ways:—First, as matter; Secondly, as consciousness; Thirdly, in organic formations, the instincts, impulses etc. The phenomena of this third class are attributed to the immediate activity of the Unconscious and it is therefore upon these he relies to prove, if not the existence of the Unconscious, at least its interference in mundane affairs. If such phenomena are capable of being explained by the first two products of the Unconscious, that is, either by matter or consciousness; if for example the instincts or the evolution of organic forms can be traced to the action of purely mechanical causes; or again, if any of the more mysterious natural operations or events can be attributed to the presence of a nascent, or diffused consciousness in nature; then in either of these cases, there is no direct irruption of the Unconscious into the phenomenal sphere, and its existence must be grounded on speculative analysis rather than on scientific evidence. Hartmann has therefore set himself to collect such evidence in the two sections which treat of the Phænomenology of the Unconscious, and to show that the facts which he adduces cannot be explained either by material or conscious psychical action. Into the highly interesting matter contained in these sections we cannot enter, but it is possible to point out the general nature of the evidence brought forward and the utterly distinct ways in which it may be interpreted.

In recent years a tendency has arisen in the scientific world to recognise life and mind as present everywhere in matter, and even to view the atoms as in some sense alive and sentient. The principle of Continuity seems to imply this, and Evolution and the Conservation of Energy seem to be ever linking the phenomena of mind more closely to the phenomena of inorganic nature. At the same time it seems impossible to connect such an organising principle with any of the mechanical forms of

force. Even if we hold that vital and mental phenomena are all physically conditioned, we are still beset by an inevitable tendency to see in or behind the physical conditions, a nascent or unrevealed spiritual principle containing the promise and potency of all terrestrial life. In other words we have here the tendency to introduce unconscious or semi-conscious mind into nature. The whole process of organic evolution is not merely conditioned by nature, but sustains and maintains itself against nature and even subjects nature to itself. Life therefore possesses the power of overmastering and overcoming that out of which it develops. It shows powers of originality and contrivance in opposition to the forces of chaos. It is capable of ordaining ends and employing means. In organic phenomena we find the workings of essential Reason subservient to a far-off goal.

Turning from the sciences of nature to the mental sciences we see the complementary side of the picture. There we found the tendency to bring mind into nature, here we find the tendency to introduce nature into mind. There we seemed to see potential mind struggling towards consciousness. Here we seem to see conscious mind subject to natural laws, to unconscious nature. Quite apart from doctrines of human automatism which reduce consciousness to a mere by-product of physiological processes, we can discover in mind itself the same unconscious intelligence that we found in nature. The laws of Association operate for the most part unconsciously. In the obscure perceptions of Leibnitz, the unconscious mental modifications of Hamilton, the unconscious cerebration of later writers, we see how widespread is the tendency to introduce an unconscious element into consciousness itself. Again in the workings of instinct we see the nascent, scarcely awakened consciousness guided apparently by unconscious perceptions as it were by an unseen intelligence. In the instinctive movements of infancy, in the subconscious activities of developed mind, in the sexual feelings, in all the emotions which influence human conduct, in thought, in language, in art, in history, we see nature everywhere moving steadily towards a goal of which the individual or individuals concerned are often unaware and seldom consciously intend. Employing their conscious processes as the instrument of its purpose and the vehicle of its will, the power in nature produces a result which is the realisation not of their designs, but of its own. Here again we see the working of a principle which, if employing and making use of consciousness, seems itself unconscious because above and beyond consciousness.

In such views there is much to afford apparent support to Hartmann's theory that an intelligence is revealed in nature

which is externally and accidentally related to a foreign principle, whose origin and power is distinct, and the activity of which it can only indirectly and imperfectly control. A similar inference had been drawn from the contemplation of nature by the ancient Gnostics. In the world they thought they recognised the commixture of two hostile realms, the conflict of two opposite principles. These systems were all more or less dualistic. Hartmann aims at avoiding the dualism by transferring the opposition to the Absolute which thus becomes a kingdom divided against itself. The rational and irrational principles are opposite poles, he says, of one subject. It is not an antithesis of coexistent essences, but of two contending attributes of one absolute essence. But, with this modification, the unconscious will and intelligence behind nature are dualistically conceived.

When however we contemplate the real tendency of the scientific theories referred to, we shall find that it is against, rather than favourable to, this dualism in the Absolute. When nature arrives at results apparently similar to those which conscious mind attains, the tendency of modern science is not to attribute these results to the irruption of any external influence, conscious or unconscious, into nature, suspending and overruling the laws and forces already operative there, but rather to exhibit such apparently designed effects as necessary consequences of the ultimate laws which govern the distribution of matter and energy in the universe. The more complex products of nature are in this way considered as the outcome of mechanical law, and the universe is regarded not merely as the theatre, but also as the efficient of the products of life and mind. If on such a view the notion of design be still retained it can only be by postulating the existence in nature of immanent teleology. This supposes that design in nature, instead of springing from the arbitrary interference of an unconscious principle, is really coeval with the origin of things. Conscious mind must then be regarded not as an occasional and accidental visitant in the universe, but as the presupposition of the universe itself.

But it is when we come to the direct phenomena of consciousness that we find the most marked contrast between the philosophy of Hartmann and modern science. From the standpoint of Science it is the unconscious factor in mind which can be most easily explained without appeal to preternatural agencies. Philosophy has generally identified the unconscious with the material, the conscious with the immaterial. "It is precisely consciousness," says John Stuart Mill, "which our materialistic philosophers confess themselves unable to explain."

Not so Hartmann. He boldly identifies consciousness with the material side. All conscious thinking is to him materially conditioned. It is, he says, the unconscious element in mind, which represents a fresh irruption of immaterial, spiritual existence. But it is precisely the unconscious phenomena of mind that Physiology traces most confidently to the action of the nervous system. Whether we can dissociate consciousness from matter or not, we certainly cannot dissociate the processes of unconscious cerebration from their material embodiment. The weight of physiological experiment goes to shew that, whenever we can discover in the domain of conscious intelligence the influence of antecedents not consciously recognisable, these antecedents belong to the region of material necessity and represent a tendency emanating from nature, which thus makes its power felt within the world of mind. How it is possible for consciousness thus to influence, and to be influenced by that which has not come and may never come within its range, is a problem which can only be solved by a theory which affirms, not the antagonism, but the inherent correlation of spirit and nature, consciousness and its object.

Hartmann falls into error and comes into collision with science just because he has not solved the metaphysical problem. Strange though it may appear, the very circumstances which contributed most to the success of the *Philosophy of the Unconscious* have been speculatively the most disastrous to it. The success of Hartmann's book may be traced to several causes. The adoption of Schopenhauer's doctrine of the Will, which had gained a certain literary ascendency: the incorporation of the results of Hegel's system combined with rejection of the dialectical method: the substitution for that method of an empirical method based on the facts of inductive science: all these things united to give an impetus to the new philosophy. Yet each helped to shut it out from real success and precluded it from giving the true synthesis of Being and Thought, either in the sphere of finite existence or in the Absolute. Schopenhauer's Will supplied an arbitrary, instead of a reasoned and demonstrated combination of Force and Idea. The rejection of Hegel's method prevented Hartmann from viewing the universe as a rationally articulated whole. Finally, the attempt to introduce the empirical method into metaphysics, necessarily led to the substitution for science of metaphysical assumptions, and to the substitution for metaphysics of scientific absurdities.

When we contemplate the union of the ultimate principles of existence from the point of view of their intrinsic nature, we take the standpoint of the metaphysician. The elements of

being, intelligible and real, are not separable principles but essentially inter-related. These relativities the metaphysician investigates *a priori*, not so much as being facts themselves as being rather the supreme conditions to which all matters of fact must conform. The man of science, on the other hand, interprets existence not by reasonings derived from abstract necessities, but by inferences from perceived facts. The laws at which he arrives at once express and are the result of the nature of some special class of phenomena. But the existence of this special class of phenomena, and its relation not only to the mind but to all other classes of things, is matter of metaphysic. When the man of science conforms his thought to things and to some special mode of investigating things, he is only obeying in detail a necessity which Metaphysic can prove to flow from the very nature of the Absolute itself. Science therefore and Metaphysics agree; they only come in conflict when one encroaches on the domain of the other. If the man of science tries to account for the abstract necessities which unconsciously condition all thought and existence, by laws of concrete phenomena which really depend upon and illustrate those abstract principles, he is attempting to explain by means of science what is excluded from the sphere of scientific explanation by the nature of science itself. If the metaphysician uses his abstract principles not merely to indicate those lines of relativity and forms of interconnection which the truths of science must exemplify, but for the purpose of explaining actual scientific facts, he intrudes into the sphere of science and violates the conception of scientific law. If his metaphysical principle could fulfil such a function it would become itself a merely empirical fact, part of the data of experience. What can explain the actual must itself be actual. Examples of this confusion abound in Hartmann's writings. His wide acquaintance with natural science is in this respect an element of weakness. It leads him to explain scientific problems by the introduction of metaphysical agencies, which however he may assert that they act in accordance with law, cannot be brought under the conception of natural law, for then these agencies would be identical with certain empirical facts which by explaining the phenomena physically would render the metaphysical explanation unnecessary. The agencies and elements to which science appeals, and by means of which it explains nature, are themselves parts of nature, are something actual. But Hartmann's Will and Idea are not actual in this sense, because they are that out of which the actual issues. They do not belong to the world of real existence, and yet they are assumed by Hartmann to interfere with, alter and add to

the processes of nature, just as if they themselves existed as particular facts *in rerum naturâ*. It is however the very nature of the Absolute to act only by embodying itself in the Relative and Finite. Hartmann's principles act, so to speak, in their disembodied state. Out of the depths of the Unconscious arises a distinctly miraculous power.

From this point of view it follows that the causes and laws which Inductive science recognises belong only to the region of the Positive and Conditioned, and are withdrawn from the sphere of the Absolute and Unconditioned. The act through which the Unconditioned and Absolute passes into the Conditioned and Relative lies outside the Conditioned and can represent no irruption into or interruption of the process of finite development. But this can be shown only if the attributes which Hartmann assigns to the Absolute, are divested of the character of blank potentialities, and are regarded as filled actuality existing prior to the world-process and flowing forth continually into things. The life of the Absolute is thus not merged in the world-process. The latter is rather the result, the outcome of the eternal activity of God. In this way too, the pre-mundane existence of God will not be as Hartmann imagines it, one of rest and empty solitude. Just as Aristotle truly says of the soul, that it is in a way all existing things, in a far truer and more real sense is God that "which was and is and shall be."

Hartmann was precluded from this solution of the metaphysical problem by his rejection of Hegel's Dialectical method. By his immediate disciples that method was considered Hegel's chief claim to renown. Now the Dialectical method is rejected by those who otherwise are followers of Hegel, by Biedermann, Pfleiderer, Volkelt and Hartmann. Yet the earlier view is the true one. The Hegelian Dialectic represents an attempt to solve the same problem which Kant attempted in the Schematism of the Categories. That problem must be solved if we are to form a true philosophic conception of the relation of the Absolute Being to the universe of finite things. When in Christian Theology it was held that we can apprehend God *viâ causalitatis, viâ negationis* and *viâ eminentiæ*, the belief in a Being was affirmed who is no mere collection of detached agencies, but in Whom Power and Thought and Goodness are absolutely one. In like manner in modern philosophy, if we study it in its Ideal and Real phases, we shall be led to the belief in a Being who is distinct from the universe, but is at the same time, as the inner self-relation of the Ideal and Real sides of existence, at once its Author and its End.

## IV.—TIME AND THE SUCCESSION OF EVENTS.

By J. L. McIntyre.

Time, it may be taken for granted, is no longer regarded by any school of philosophy as an ultimate reality subsisting for itself, but is looked upon as a relation, or series of relations, holding between events. As far as modern problems are concerned, the question is rather as to the validity of the time-relations in their application to the ultimately real,—whether, that is, the relations, and with them the events between which they hold, are merely appearances to human sense and thought of that which is in itself timeless and changeless, or whether, on the contrary, relations and events alike are in any sense predicable of the real. The former view is that of very different schools, Mystics of every type and empirical believers in an Unknowable or Transcendent Reality of which we may predicate nothing that we find in the actual universe of experience; while the latter view also finds defenders in otherwise opposite camps. The meaning of the problem will be clear if we lay before ourselves the results which logically follow from acceptance of one or other of the two views. If the time-succession is unreal, or only a form of appearance of the ultimately real,—from the knowledge of which we are in either case excluded,—then change is equally so, activity also, final causes or ends, development, morality, everything in fact which we regard as valuable in our universe. With the non-reality of time all these must fall, and what is there that remains? In our experience a system of thought-contents alone answers to the reality required: it alone is, as such, out of time and unchanging; but no one would be prepared to identify the real with such a system, which in itself is a pure abstraction, without real existence, depending rather on the subject which thinks it. We are therefore referred outside of experience to an incomprehensible, whether it be the Unknowable of Herbert Spencer, or the harmonious Experience of Mr Bradley. According to the latter

every part of our phenomenal world has its place in the real, only all contradictions are there removed, harmonised and united in one timeless experience,—so that at any rate that which we know is not the real. But "harmony" is the most formal of terms, expressing merely the unity which is the pre-supposition of all metaphysics, even of all science; while an experience which is neither feeling nor thought nor any other form of human experience, and which in addition is timeless, is the most unknowable of unknowables.

Adherence to the former of the two views accordingly leads us to an incomprehensible reality, which no study of the phenomenal will help us to understand, since the one is radically different from the other, however closely they may be connected together. If on the other hand we accept the second view, that time-relations are predicable of the ultimate reality, then it seems to follow that there is an endless process,—that "spurious infinite" upon which, since Hegel, metaphysicians have looked askance,—as, among other defects, inconsistent with the supposed perfection of the Absolute. *A fortiori* is this the case if the process be interpreted as a progress, while if we deny this of the Absolute, reducing succession in him to "pulses of feeling" as it were, then the progress of the finite individual becomes itself of doubtful worth; for nothing less than the whole of reality seems to satisfy the individual as a sphere for his activity, and if his progress is not a real one in reference to that, then it is worthless to him also.

Without hoping to clear these difficulties away, which would demand an entire metaphysical system, we shall try to prove that it is possible to form a rational conception of the relation of time-succession to the Absolute, which, in spite of its difficulties, at least does not involve us in the admission that the latter is an absolutely unknowable reality. A criterion can of course be found only in experience, in the widest sense, and inference from it; merely logical criteria are on the other hand formal, they neither prove nor disprove anything. Such a one is "self-contradiction," on which Mr Bradley bases his metaphysical theory, and his criticism of reality. Every one would be ready to admit that the proposition "A is not not-A" is true, for example, "a unity is not a non-unity," but the crux lies in the discovery of what is a non-unity, and for this we have to go to experience. We cannot say at once that any diversity is a non-unity, on the contrary we find that it is not so. If, however, predication itself, as Mr Bradley holds, involves self-contradiction, then for us nothing but a bare identity, if there could be such, would be valid. Any plurality, any diversity, considered as in some way a unity, would necessarily turn out to be self-

contradictory for thought, and this because thought is essentially analytical, seeking to break up any given unity into a diversity which is then predicated of the unity. It is thus impossible in our experience that we should ever attain to or be able to conceive a unity without diversity, and the result of Mr Bradley's theory only furnishes a proof of this. For when he seems to make any positive statements about the real, they are inevitably open to the same charge which he brings against all other views, —that they involve the contradiction of the one in many, which we can neither avoid nor accept. 'Harmony' and 'Experience' are his favourite terms for designating the Absolute; but within a harmony variety is necessary, otherwise it would not be a harmony. It is true the unity is the higher element and the true aspect of a harmony, but for it to be felt and exist the variety must be felt and exist. Similarly, 'experience' is either a meaningless term, or involves distinction, relation, and all the other 'appearances' within itself. Even granting the possibility of an experience representing a unity above all our finite forms of experience, just as feeling in some shape represents a unity below them, still the Absolute can evidently not *be* this experience. An experience, as we know it, does not exist independently, hanging in the air, but is usually thought to belong to a subject. We regard our experience as distinguishing us, for better or worse, from all other individuals,—as forming an absolute gulf of separation between us. Similarly one would think that the Absolute Experience must at least belong to a subject, in which case we should have the distinction of the Absolute and its Experience, the same as that of Substance and Quality, which is the basis of the criticism of appearance. The fact that this experience is to be timeless is apt to veil the difficulty, and seems to give us a unity absolutely without difference, analogous to those cases of intense feeling in our own lives, when we seem to be wholly absorbed in the feeling, our individuality passing from us to it. But this after all is only seeming; we are never even wholly absorbed, and as the state passes away we see that it was only an element in our lives,—one of our feelings. A timeless experience is for us a contradiction in terms, we can apply no meaning to the phrase; even if we supposed the life of the Absolute to consist in a higher experience we should be compelled to the notion of pulsations within this experience. In any case however the Absolute and its Experience stand over against one another as substance and quality; we cannot identify them, and the contradiction remains unsolved, because it is one necessary to our thought of the real.

The difficulty is still more obvious if we take Mr Bradley's

theory of Appearance and Reality as a whole. By simply labelling things,—individuals, time, space, and so on—as appearances, we have not got rid of them. The term 'appearance' seems a false one to apply in this case, for in its very meaning it presupposes at least a duality of the appearing ($A$) and that to which it appears ($B$), and again the duality of the real $A$ and the appearing $A$. $A$ cannot appear to itself, therefore $B$ cannot fall within the appearance of $A$, unless we divide $A$ into $B$ and $C$, so that $B$ appears to $C$ and perhaps $C$ to $B$. But if so, the division within $A$ must be a real, not an apparent one (for to what could the division appear?), and then we have a flagrant case of unity and diversity in the real. Mr Bradley merely avoids the difficulty by making $B$, the finite individual to which the Absolute ($A$) appears, itself a part of the appearance of the Absolute, and by insisting that of course the appearance is not absolutely *nothing*. But this does not disprove the above argument; the appearance, he says, exists, but only as an appearance, that is, according to what seems the only way of interpreting the word, as an act of the Real upon some finite mind producing in it a representation of the Real, which is subject to the limitations of the finite mind; and he contrasts this existence with that of the Real. But it must be again emphasised that the mind to which the real is presented as appearance cannot itself be a part of that appearance, i.e. of its own presentation. It may of course be presented to itself, but this presentation would be merely an appearance of it, would not exhaust its reality Again, we cannot say that each of all finite individuals is an appearance to the others, so that they in some strange way exhaust one another's reality, and free the Absolute from the taint of their inherence in it. For this would merely bring us back to the difficulty referred to above, of an appearance suspended in the air, with nothing to which it appears, and no rational ground for existence. So that, if the theory is really meant for one of 'appearance,' we must admit to finite individuals a reality which is not that of appearance, but as valid as that of the Absolute itself. However, even if we do not lay stress on the meaning of appearance, and suppose that something else is meant,—which we may perhaps be allowed to call 'modification,'—then we may come nearer the truth, but the difficulties of the one and many are not settled. They are indeed, emphasized. Above all we have the ground-distinction, beyond which we cannot go, of the Absolute and its Modes. We can give no reason whatever, and it is hopeless to seek one, for the fact that the modifications of the Absolute, and just such modifications, exist; nor can we form any theory of the Absolute as distinct from its modifications. For, in any case, they exist; they

are therefore part of the whole of reality; if the Absolute exists apart, then it is not the whole of reality; if it exists in them, then it is merely one aspect of the whole, separate existences and acts being a distinct but equally necessary aspect.

Accordingly we must decide that contradiction, so far as it relates to the unity of many in one, and the impossibility of our grasping this unity and diversity in thought, is no criterion by which we may rule anything out of court as unreal, for there is nothing known to us, nor anything knowable by us, which is not at once a unity and a diversity, and so far therefore involves a contradiction in itself. This *a priori* method must be given up and experience itself questioned; for the true method by which metaphysical truth may be acquired seems to be the searching out of the pre-suppositions which are necessary in order to explain what is given as real in experience. In other words, we must put the problem of metaphysics in this way:—of what nature must the ultimate reality be, in order that through it we may account for our experience? We seek to think reality as a whole, as some kind of unity, not in the disjointed way in which it comes to us in our ordinary experience, but as uniting all the separate parts in one whole. Starting out from the separate things and events, individuals and acts, of the empirical world, we try in what way such a world is to be thought as a whole, on what pre-suppositions it could exist as it appears to us. A metaphysical theory, accordingly, can never be more than a hypothesis, and that one is to be accepted which seems best to account for all the facts given to us. By such a method as this we shall here attempt to solve the metaphysical problem with which we started,—that as to the reality or non-reality of the time-process.

In our developed experience "time" appears as a continuous whole, forming a background on which events are arranged, extending in one direction from the past to the future. It is both continuous and discrete, for while the events are regarded as taking place in moments of time, these moments are themselves parts of a continuous unity, and it is accordingly impossible to determine any ultimate shortest moment, since, owing to the continuity, any part of the whole, however small, seems infinitely divisible. "The flow of time" seems thus a natural metaphor. On these results the ordinary scientific view of time was based,—that of Newton, to whom "time, absolute, true, and mathematical, flows continuously and equably in itself without relation to any external thing." The flow of time is unaffected by the events which take place in it,—that is, the two series, moments of time and events, seem to run parallel to, but independent of, one another. It was for this reason that

Leibnitz denied an absolute reality to time, as he could not conceive of a reality which was out of relation to others, that is without force or energy. Time, accordingly, is with him merely ideal, phenomenal, with however a foundation in reality, namely, the order of succession of events. He transfers the real existence from time as a whole to the separate events which take place, change and activity being necessary and inseparable determinations of any real existence.

After Leibnitz attention is more and more directed towards our knowledge of time, how it is possible and what it involves, this phase reaching its theoretical completion in Kant. While Leibnitz held that time in us is only possible if there be a real succession, Kant insists on the other hand that the knowledge of succession presupposes that of time;—I could not regard two events as successive had I not already the notion of time as a whole, in which the events are arranged by me. Again, while I cannot think of phenomena as out of time, I can think of time as empty of events. Hence Kant decides that time is an *a priori* form in us, and is therefore no determination of reality as independent of us; while from the singleness of time, and the fact that every time is regarded as a part of this one time, he shows that it is a form of perception, not a concept. The latter argument is unimportant for our purpose; all knowledge is derived from perception, and concepts are abstracted from it. It is not even necessary that there should be two or more objects given, in order that a concept may be formed. Time itself, when thought of, that is, when its existence is abstracted from, is also a concept. Time as a whole, in fact, is never perceived, but is only an inference from the given parts. The gist of Kant's argument lies in the fact of there being only one time, which is homogeneous throughout its parts, while the parts are not thought of as examples of a general type, but as parts of one whole. A second argument, which seeks to show that the time-form is given independently of experience, inasmuch as there exist absolutely necessary propositions concerning it, and these cannot be given through experience, need not delay us. Should time have a reality independent of our consciousness, Kant holds, then it would be impossible for us to form such a necessarily valid proposition as "Time has only one dimension." This may be granted, but, as a matter of fact, no proposition that we can form is absolutely and necessarily valid, but is valid only under the condition that our knowledge is complete, and of this we can never be certain. Thus in a spherical space two straight lines may cut one another in two distinct points: in this way we have enlarged our notions of space, geometry no longer giving absolutely necessary

propositions. In the same way it may be possible in the future to enlarge our notions of time. As far as our present knowledge goes, however, the propositions we make regarding time are justified, and there is no present likelihood of its becoming necessary for us to change our ideas. In meta-mathematics there is a possibility of some solid result, but the same cannot be said of the theory of different time-series, in different directions.

The 'apriority' of time in Kant's sense must also be given up; for it is not of course a ready-made form which we apply from the first to sensations as they arise in us, but an inference from change in sensation as felt. Kant still believed with the older psychologists that our sensations come to us as isolated units which have then somehow to be united, or subjected to the forms of the mind. It is a belief that has come down as far as Green, to whom relations are still 'the work of the mind,' which therefore constitutes experience for us. On the contrary, it is rather the case that our knowledge would be inexplicable if all that we derived from without were a series,—not felt as a series,—of simple unrelated sensations. If this were so, then indeed the theory of idealism would be justified,—that our world of experience is through and through the creation, both in form and in matter, of a consciousness, through which each individual recreates the world for himself. With Kant all that we can know is held to be the creation—necessary creation, perhaps—of our minds; for ultimately the very differences of sensations, since they are not felt, must be the work of thought; and Green has only interpreted this consistently. But change of sensation, difference of sensation, must be experienced by us before, on their basis, we can build up our world of experience. It is useless to say that a change, a relation of sensations, is not a sensation; it is certainly not the sensations of which it is a relation or change, but experienced it must be. As James has said,—"If there be such things as feelings at all, then so surely as relations between objects exist *in rerum naturâ*, so surely and more surely do feelings exist to which these relations are known." When we have finally got rid of the old psychology,—of 'simple ideas of sensation' and the like, we shall no longer be tempted to glorify our own part in the creation of the world of experience, and on the other hand to disparage that world as inadequate to the real world, but shall be content to regard the work of thought as abstraction from the given, and the predication of such abstracts of the real. More than this it is not,—it is representative, not creative.

Time as a form of perception in Kant's sense gives us accordingly no difficulty; as such it is one of the logical

constituents into which our knowledge may be analysed, for we find that all events are necessarily arranged by us in a time-series, and when we look at our knowledge as a whole, time appears to be not so much an element of what is known, as a form in which certain elements are arranged: and hence, if we make within knowledge a distinction of subjective and objective, it may rather be ascribed to the former aspect than to the latter. But the distinction of subjective and objective within knowledge is a purely abstract one. All is equally subjective, or equally objective, so that from the relation of time as a form to other logical elements of knowledge we can make no inference as to its objective validity.

In another direction, however, Kant carries on the work of Leibnitz. We have seen that he regards time as the '*conditio cognoscendi*' of succession; in the same way he holds that the course of time,—the succession within it,—requires a permanent background (*i.e.* not in time) against which it takes place, as we should otherwise fall into an 'infinite process.' We can compare two periods of time only over against a permanent, for if we compared them by a standard which was itself in process of change, this change would require another standard of measurement, and so on '*ad infinitum.*' Thus it is over against a permanent matter in space that our sensations appear to us as fleeting, changing, in time; and on the other hand the presence of a permanent subject to the sensations is equally necessary. The flow of time accordingly seems conditioned by two permanents. Kant however confuses two things, the origin of our knowledge of time or change, and the condition of there being such a change. We learn to know change first through the differences in a material reality given us as permanent, but later found to be only relatively so. But it is self-evident that a matter of this kind could not be the condition of the changes either in us or in itself. The reality which is the source of change cannot be material in the ordinary sense; (even the 'force' or 'energy' of the physicists is immaterial). On the other hand a permanent subject is at once the condition of knowledge of change and of its existence. What Kant proves is that time cannot stand alone,—neither it nor the events which take place in it can have an existence independent of each other, while the events on their part cannot hang in the air, as particular existences, but must be changes of something, which accordingly persists in time, or may from one point of view be said to be out of time, while its changes are "in time." This is the meaning of Kant's contention, but it does not justify his theory of the mere subjectivity of time.

In the necessity of a permanent subject all modern theories

of the non-reality of time seem to have their origin. It is held that in our consciousness we have given us a timeless reality, and it is felt that the real should be explained by the highest reality which we know,—our consciousness. This is the argument of Green; the possibility, it is said, of my being conscious of two successive events, as successive,—for example, of two ideas succeeding one another,—requires that consciousness, as subject, be present to both, and therefore itself out of time. In the same way, since all relations imply consciousness as a condition of their possibility, and succession is a relation, therefore we must ultimately suppose an eternal or timeless consciousness as present to, and as the condition of, the whole time-series. Whatever truth there may be in this view, it is here based on a false theory of knowledge, and of the relation of thought to reality. In a sense, of course, I must be present to the successive events of which I am conscious, but this does not prove that I am out of time any more than a tree is out of time because it suffers gradual growth and decay. The consciousness of each event, and the consciousness of their succession to each other are changes of myself as the stages of growth are changes of the tree. What misleads is that in the last act, the consciousness of the two events as successive, these events and their succession are held together as a content of knowledge, and as such, timeless; for by the act of thought abstraction is made from the existence of the events, and their occurrence in time, while time itself, in thought, is equally a timeless content. Not that the content is unchangeable for me; in each moment it is different from what it was in the previous one, but we unconsciously suppose an ideal content, that which the real would give if it were attainable by thought, and regard this as existing even when it is no longer being thought. The fixed, timeless content however exists only for thought, in a thinking subject. Apart from changes within it, in its content, consciousness is the merest form; even a consciousness to which only one content is always present,—as the divine consciousness according to most idealists,—is inconceivable. We cannot in fact dispute the reality of change. This was in vain urged against Kant. "If I could intuite myself," he says, "or be intuited by another being, without the condition of sensibility, then those very determinations which we now represent to ourselves as changes would present to us a knowledge in which the representation of time, and consequently of change, would not appear." But surely this is the most baseless hypothesis that could be made, and one which explains nothing; one of its peculiar consequences is to be found in Kant's theory of morally good and evil actions as the appear-

ances in us of a timeless act, which involves the timeless, therefore, in the phenomenal world, eternal existence (pre-, and post-immortality) of every individual, and which completely fails to explain the possibility of moral progress.

What is true is that change would have no meaning without a permanent which, relatively at least, does not change, but whose modes or conditions change. "All that changes is permanent, and only the condition thereof changes"; "Permanence is, in fact, just another expression for time, as the abiding correlate of all existence of phenomena, and of all changes, and of all coexistence. For change does not affect time itself, but only the phenomena in time." "If we were to attribute succession to time itself, we should be obliged to cogitate another time, in which the succession would be possible." Kant is speaking of the phenomenal world, but we must transfer it to the world of reality; and by time he means the whole time, as a background against which events take place, so that change is only in the latter. The question is thus raised whether it is the moments of time itself that are successive, or whether only the events in it. It is at this point that Lotze attacks the question, in further developing Kant's theory of time; until he wrote, the theory remained practically untouched, though the difficulties inherent in the popular view of time were fully dwelt upon by Herbart.

Our ordinary notions of time, Lotze points out, are largely derived from space-images; we speak of it as a line, extending infinitely in two directions, or again as a stream flowing from the past to the future, or from the future to the past. These notions are defective, for every point of a line has the same reality, whereas in time only one point has properly reality, the reality of the past being different alike from that of the present and from that of the future; even the reality of the one point, the "present," is in a state of change. Again, the notion of a stream involves that of a source, of an end, of a bed within which the stream flows, so that we seem to think of time as something that has had a beginning, and may have an end, and which requires a background in contrast with which it is thought of as flowing. But when we are speaking of empty time, this is inconsistent. In the same way we cannot call it a series (in which all the members have equal reality, as where we may with the same legitimacy proceed from $n$ to $n-1$ as to $n+1$), nor a process, for there is nothing that develops or that is in process. We are referred therefore to the content of time, for an explanation of the reality which we are to attribute to it. But here time seems wholly useless, for by no possibility can we think of the passage of time as having an influence upon

the course of events, as a last condition added to others in producing any particular change. If all the material conditions are given, it seems that the change must be given also, and simultaneously; if not, the event can never happen. And if, all the conditions being given, the event is not simultaneously present, there seems no reason why it should appear a moment later, rather than a century later. Nor can we see why a particular place in the course of time should lend a particular value to a special reality, so that it thereby conditions changes over which it would otherwise have had no power. We are therefore compelled to give up the notion of empty time as a whole reality, containing and conditioning events. We do this the more readily, owing to the peculiar position which we wish to attribute to a particular moment of time,—the present. The primary difficulty of determining this present has been dwelt upon by Mr Bradley; no moment of time seems to be an irreducible unit, but always to contain smaller moments within itself, and a transition from past to present, from present to future. Time in fact seems to be wholly continuous, so that any divisions we may make are arbitrary and unreal. Perhaps a way may be found of avoiding this difficulty, but for the moment let it be taken for granted with Lotze that there is a present. Now if time were an existing whole,—an independent reality,—every part would necessarily have the same reality as every other, and therefore the content of each part, whereas we actually regard only one part as real, in the full sense, the past being no longer real and the future not yet. Still, the past seems to have gone 'somewhere,' to retain therefore some shadow of its reality, and the future to come from some 'womb of time.' Hence "the efforts, which are ever being renewed, to include the real process of becoming within the compass of an abiding reality." The readiest way of solving this dilemma seems to be that of regarding the present as relative to our knowledge only, so that, while the real is timeless, we are compelled, owing to our position within the whole of reality, and the finitude of our knowledge, to regard what directly affects ourselves as more real, or rather as having a brighter reality, than what affects us more indirectly, as the condition of our actual feelings, or as conditioned by them. If the real is timeless, that is, a whole of conditioning and conditioned (supposing that we can apply any meaning to these terms in a timeless reality), then by this method we might explain the fact that it appears to us under the form of time. Even granting however that our own successive acts and feelings are themselves appearances to us of a timeless reality, as Kant held, there remains the insuperable objection that, in order that 'the past'

may be known to me at all, there must be recollection, and therefore an experience other than that which I now have,— therefore change,— and when change is admitted, all is admitted. Without this, had I a fixed place in the sum of conditions and conditioned within the real, then it would be impossible for me to know either a past or a future, or to make any distinction between these and my present. All that I knew would be for me equally real, just as the parts of a syllogism have equal reality for me when I think them. I do not place the premisses in the past, and the conclusion in the future, but regard all as a timeless whole. So it would be were I an element in such a non-temporal reality, and confined for my knowledge to my place within it.

On such grounds Lotze decides that while empty time can have no reality outside of our apprehension, and is a notion formed psychologically by the abstraction from events of the time-element in their occurrence, which we learn by temporal signs analogous to the local signs, and which by the help of spatial images we form into a whole and endow with independent existence, still there must be some reality to which the signs correspond, and this he finds in the succession of events. Time accordingly does not condition the course of events, but the latter alone is real, and creates in us the form known as time. Succession then is real, and it is only at isolated moments that Lotze contemplates a reality which should be wholly timeless, as when he speaks of "the truly existing as exalted above all Time-process, and yet so to be thought that in its being and essence a time-process takes place." At times he seems to accept the possibility of that which he had previously denied,—the real as a sum of conditions and conditioned, timelessly existing.

That there should be a real succession of events is necessary to explain the fact of our experience, and accordingly must be accepted; and time as the sum of the relations (of succession) between these events is valid of the real. But here as in all other cases it is true that there can be no relations between independent realities, whether the latter are things or events. Two such realities would on the contrary be each in a world for itself, unaffected by the other. Related events are doubly dependent. An event as such cannot stand alone but must be referred to a subject, so that event in the last analysis is equivalent to act. Lotze has sufficiently shown that the interaction of two objects must ultimately be explained by the act of a universal subject present in both. Further, where events are related to each other as successive, they must be referred ultimately to one subject, so that the succession of

events is reducible to the succession of the acts of the Absolute. The first of these propositions requires no proof; an event cannot hang in the air, but must, as we say, take place *between* some things or *in* some subject. As to the second, the possibility has been suggested that events have no connection at all with one another, or merely for me as knowing them, and arranging them as successive, and again the possibility of there being different series of succession, for different individuals, so that the whole becomes somehow simultaneous; while *A*'s acts and knowledge proceed in the direction and order *a b c*, those of *B* may run in the order *c b a*, so that the orders cancel one another. But my knowledge is not a product of my own nature, it is a product rather of the interaction of spirit and body, which equally with the action of body upon body demands a universal subject to bring it about. My act of knowledge is only one side of this ultimate act. And as all material events are given as closely connected with one another, so must all spiritual events be, if only through the material, in intimate connection. The process of knowledge in one member of the spiritual world is therefore as closely related to that in another, as the movement of one body to that of another in space. Movements and acts alike may be simultaneous, but if so, then they are only different aspects of the one act of the Absolute, —that act in different references, different relations, we may say. So that just as all objects, all existing things, must coexist in one and the same space, "intelligible" or not, so all events must take place in one and the same time. The succession of the acts of the Absolute determines that of phenomenal events, 'phenomenal' meaning not the appearance of an unknown, but one aspect of a real, or the real in one of its references. (It is only in this sense that our knowledge is of phenomena,—because of its incompleteness.) It is therefore impossible that there should be different time-series in different directions.

What then are we to say of past, present, and future? Do these distinctions exist for the Absolute as for us, and if so, how are we to define the present? The answer lies in the distinction between the existence of a 'thing' or 'subject,' and that of 'events' or 'acts.' Only the latter are in time, are successive. It is obvious that in everything given to us in experience there are these two aspects,—the thing and the event, the individual and the act, the permanent and the changing, the one and the many; most of the disputes in philosophy have turned upon the question which of these two aspects is the 'real' one, which the 'phenomenal.' But neither can be given up, the one is as real as the other. A thing which does not change, a change which

is not the change of something, an individual which does not act, and an act which is not that of an individual, are alike incomprehensible. This applies to every sphere of our knowledge. A thing is one and its special qualities are many, or it is permanent,—one in that sense,—and its changes are many; any event which we take as such is an abstraction from the continuity of all happening; it is one of the discrete points in the continuous change of the universe, yet the discreteness is as essential as the continuity. It is not merely that discrete and continuous are relative terms, the one presupposing the other, and the two, in Hegelian phrase, melting into a higher unity. The discrete and the continuous are just given together, and we must take them so; they are given to us as different aspects of the same reality. Not merely again as our finite way of looking at what is neither continuous nor discrete, but something higher than both; the very attempt to think such an "Identity" repels us, and inevitably leads to failure. Unless we are to distrust perception and thought altogether, to give up thinking about the real at all, then we must accept this doublesidedness of reality as ultimate. So a 'thing' seems on the one hand to possess a unity, in virtue of which it is that particular thing and not another, but this unity we cannot describe further, nor identify with any particular quality or relation of the thing or its parts; on the other hand, a thing has many qualities, relations to other things, relations of its qualities to one another, and accordingly many ways of acting and reacting upon other things. All this series we may know, and the knowledge constitutes our knowledge of the thing, but no one of them, nor all put together *is* the thing, which seems obstinately to conceal itself from our view, to remain a substratum, an obscure 'something' behind them all. Yet our knowledge of it only grows through knowledge of its qualities, relations, ways of acting; we can have no hope of knowing it as something different from and beside all these, nor, paradoxical as it may seem, *is* it anything other than these. Knowledge of the thing in itself, in this sense, we have none; the unity we speak of, taken by itself, is a mere term: we cannot know anything as a unity unless we have something to unite, that is, unless we know that of which it is the unity. On the other hand, the particulars alone give us no knowledge of the thing, otherwise we could make no distinction of one thing from others, could make no distinctions at all in our knowledge except that of one merest particular from another. Even this we could not do, for it is only in virtue of a unity that we distinguish at all,—between two colours for example by their underlying identity.

The same result will be gained if we go higher in the scale,

and from a thing in the ordinary sense pass to a living individual. It could be proved in the case of a 'material thing' that its qualities are simply its ways of acting and reacting. The same is true of the outward qualities of the individual, and to a still more obvious degree of his inward qualities, which are in fact generalisations from his observed particular acts. We may therefore consider the individual merely as acting, and we see at once the two aspects separate and yet united in him. For on the one hand no particular act is the individual, nor any number, nor, supposing we could exhaust them, the sum of all; just as in the case of the thing, the individual himself remains over and above his particular acts, a unity, a something we know not what,—that which acts. Yet the individual is known, and moreover is, only through and in his acts. He is not a being apart, to whom the acts are attached as beads to a string. If we knew every particular act of the individual, from the beginning to the end, then, granted the unity of these acts, we should know the individual absolutely. Thus the individual apart from his acts, the acts apart from the individual, are alike abstractions,—necessary abstractions for the sake of knowledge, but still neither giving the truth, each only an aspect of the truth. Both these aspects are necessary for a knowledge of the whole. It is true they seem to leave nothing but contradiction in our knowledge, but just this contradiction is true of the real, that it is these two things at once,—a unity and a variety.

The application to the whole of reality, to the Absolute in itself and the succession of events, is easily made. Neither with the unity of the All, nor with its discrete parts can we dispense, —and the unity is not a merely formal one, but a living reality, the real subject to which all events in the universe are to be referred as its acts. It is true the notion 'event,' as we have seen, may require to be changed, or to be improved, for not everything that we call an event is to be regarded as an act of the Absolute; on the contrary, each act of the Absolute must find expression in an indefinite number of simultaneous 'events'; this is demanded by the causal connection of things in the universe. Thus we have two inseparable aspects under which the universe is to be regarded,—on the one hand as God, the Absolute, "exalted above all Time-process," eternal and unchangeable, the unity, the harmony of all things, absolutely unknowable as 'in himself,' or only to be determined by negation:—on the other hand the so-called phenomenal universe, the world of finite things, individuals, where all changes, all is in process, where also no fixed knowledge seems possible, for that which we seek to know changes under our hands, where content succeeds content, sometimes in apparent order, sometimes chaotic. It is only by uniting the two aspects that the

possibility of knowledge, and of an object to be known, are secured to us,—by regarding the succession of events as the succession of the acts of the Absolute. By this means the empty unity receives filling, the harmony is seen to be a real harmony, the Absolute becomes a living Being, the Unknowable becomes knowable through His acts. For just as our sole knowledge of the character of the finite individual is derived from his acts, so it is with the Infinite. He *is* what he does, and all our knowledge of natural events, of human events, is as such an approximation to a knowledge of the Absolute.

To apply our theory to the question of the relation of time to the Absolute, of the reality of past and future as compared with that of the present, it is obvious that the Absolute in himself is throughout all time equally real, while no act can claim higher reality than another; but it is of the very nature of an act to perish in existing, and as it is, it constitutes what is for us the present. Our present is therefore regulated by and dependent on the acts of the Absolute. The difficulties connected with it,—that for example of fixing in it some point which really *is* the present,—all depend upon our defective notion of the meaning of 'event.' The acts of the Absolute, even if they are no longer acts in the sense of purposive, directed to an end, but mere pulsations of experience, must be thought of as momentary, discrete, successive; there is no other way of comprehending the universe. Each act or pulsation as it exists, is the real present, or rather the content of the present. And however we may conceive the Absolute, this at any rate is clear, even to materialism, that every act, or event, involves in itself all that have preceded it,—the past,—and all that are to follow it,—the future. The existence of the present act is *in toto* different from that of all that have gone before and from that of all that are to come; as moments in the present the past may persist, and the future be involved, but they have no longer or not yet the independent existence of the actual act. It is this which is the true reality; time as a whole therefore has no existence except as an abstraction from the relations of events in the mind of the subject, the past has no existence except in memory or as a moment in the present, the future none except in foresight or inference, or again as a moment involved in the present. The Absolute is the permanently existing real Subject, the present act the momentarily existing real event. Nor is it to be supposed that time exists between the acts, unfilled by any event, for this is just that empty time which we have seen to be illusory; on the contrary the acts of the Absolute must be thought of, to use a space-metaphor, as *touching* one another, as do the points of a line. The Absolute as in itself, gives the continuity, as in its acts, the discreteness of Time.

## V.—THE *POETICS* OF ARISTOTLE.

By R. P. Hardie.

Within the last few years three important contributions have been made by English writers to the study of Aristotle's theory of fine art, Mr Prickard's *Lecture*, the chapters on Greek Art in Mr Bosanquet's *History of Æsthetic*, and Professor Butcher's *Essays*, accompanied by a critical text and a translation of the *Poetics*. It may not therefore be unfitting at the present time to call attention to a department of Aristotle's thought that has received from specialists in philosophy less attention perhaps than it deserves. The book last mentioned is the immediate occasion of the following exposition, which is an attempt to bring together and state clearly certain parts of Aristotle's doctrine, as found chiefly in the *Poetics*. I will make no apology for following the text somewhat closely, since a precise knowledge of what Aristotle actually says is an essential preliminary to understanding his theory of aesthetic in its more general aspects.

The first five chapters of the *Poetics* may be described as introductory to the main subject of the treatise, the discussion of tragedy, epic, and comedy. A definition and division of 'poetic art' (ποιητικὴ) are given in chapters 1, 2, 3. In the fourth and fifth chapters ποιητικὴ is considered teleologically and with respect to its historical development.

The definition given is informal and defective, for it contains only the genus to which ποιητικὴ belongs. Aristotle enumerates six arts (or, more accurately, the whole of each of four arts and most of each of other two) which he apparently assumes to be the chief arts to which the word is applied. All these, he says, are kinds of 'imitation' (μίμησις). How then, according to Aristotle, does ποιητικὴ *differ* from other kinds of μίμησις? We naturally turn first to his division of ποιητικὴ in order to find data for the solution of this problem.

Aristotle's first principle of division is that of medium (οἷς or ἐν οἷς μιμοῦνται), and he explains that all the species

of ποιητικὴ use as their media one or more of the three ῥυθμός, λόγος, ἁρμονία. If then a medium common and peculiar to the species of ποιητικὴ could be found, 'using that medium' would be the required differentia. The obvious suggestion is that in general ῥυθμός, λόγος and ἁρμονία are modifications of the ultimate medium, what is audible (τὸ ἀκουστόν). But, according to Aristotle, dancing, which uses ῥυθμὸς apart from ἁρμονία and λόγος, is included under ποιητική, and it appeals to *sight*, as also do acting and the other spectacular parts of drama. Hence this suggestion falls to the ground, and we must look elsewhere for the differentia of ποιητική. One may mention in passing that the other arts referred to by Aristotle, which use 'colours and forms,' are evidently painting and sculpture, especially the former (for sculpture is not explicitly mentioned in the *Poetics*, except perhaps incidentally in ch. 25). Both of these use τὸ ὁρατόν, but the use of that medium is not peculiar to them.

The second principle of division does not seem to help us, as it is applied in both γραφικὴ and ποιητική. In Aristotle's view both these arts 'imitate' *agents* (πράττοντας), and may therefore be divided according as the agents imitated are good or bad in respect of 'character' (ἦθος). Such at least is the usual interpretation, which assumes that as πρᾶξις implies ἦθος, so conversely ἦθος implies πρᾶξις. But Aristotle does not actually say that οἱ γραφεῖς 'imitate' πράττοντας: he only says that they imitate ἤθη.

Lastly, Aristotle divides ποιητικὴ according as it imitates all the agents ὡς πράττοντας or not, so distinguishing drama from the other species. In another passage he says that in tragedy the 'imitators' ποιοῦνται τὴν μίμησιν *by acting*—πράττοντες. Hence plainly in drama not only is πρᾶξις the subject imitated, but the *medium* too is πρᾶξις. This at once enables us to solve our problem. For πρᾶξις is a kind of κίνησις (πρᾶξις = κίνησις + τέλος). And we may reasonably conjecture that the use of κίνησις as a medium is peculiar to ποιητικὴ and differentiates it from other kinds of μίμησις,—κίνησις being taken to mean sensations of sight or hearing, that are successive in time. This conjecture is confirmed by passages from other writings of Aristotle, for instance *Probl.* 920 a 3, διὰ τί οἱ ῥυθμοὶ καὶ τὰ μέλη φωνὴ οὖσα ἤθεσιν ἔοικεν; ἢ ὅτι κινήσεις εἰσὶν ὥσπερ καὶ αἱ πράξεις;' Another passage quoted by Prof. Butcher (p. 125) is as follows:—διὰ τί τὸ ἀκουστὸν μόνον ἦθος ἔχει τῶν αἰσθητῶν; ἢ ὅτι κίνησιν ἔχει μόνον, οὐχ ἥν ὁ ψόφος ἡμᾶς κινεῖ,...ἀλλὰ τῆς ἑπομένης τῷ τοιούτῳ ψόφῳ αἰσθανόμεθα κινήσεως; (*Probl.* 919 b 26). Here 'μόνον' can

hardly be used in its strict sense of 'alone,' for according to the *Poetics* τὸ ὁρατὸν has ἦθος, and if τὸ ἀκουστὸν can imitate ἦθος because it has κίνησις, plainly dancing which has κίνησις can do so too. Perhaps we might say that all the species of ποιητικὴ involve ῥυθμός, using that word in the wide sense which it seems to bear in *Rhet.* 1408 b 30 (διὸ ῥυθμὸν δεῖ ἔχειν τὸν λόγον, μέτρον δὲ μή· ποίημα γὰρ ἔσται). In the *Poetics* 'ῥυθμός' seems to be limited to rhythm of a more regular kind. ἁρμονία, it may be added, is not supposed to exist apart from ῥυθμός.

Such then is the meaning that Aristotle at the beginning of the *Poetics* seems to attach to the word ποιητική. It may be expressed as 'the art of composition,' ποιεῖν in this sense being applied alike to 'composing' a poem, a piece of music, and the steps of a dance (τοῖσι χοροῖς αὐτὸς τὰ σχήματ' ἐποίουν, Aeschylus is made to say in a fr. of Aristophanes). It is narrower of course than the widest sense of ποιεῖν which is coextensive with *all* production or art, whether fine or useful.

But there is an unmistakable tendency in the *Poetics* to limit still further the use of ποιητική. A principle of selection is at work which tends to separate the *important* cases of 'composition' and to apply 'ποιητικὴ' to these alone. We see this perhaps for the first time in the division of ποιητική. The division according to medium, that is, to the use of one or more of the three ῥυθμός, λόγος, ἁρμονία, yields seven possible cases, of which two are (tacitly) rejected, since ἁρμονία is not independent of ῥυθμός. Of the remaining five Aristotle seems to group together two, λόγος ψιλὸς and λόγος ἔμμετρος, (of which the latter includes any μίμησις that uses μέτρον except tragedy, comedy, and the dithyramb,) and to regret the want of a word to denote this class. Again, in distinguishing, by means of the third principle of division, drama from the other kinds of ποιητική, he makes no use of the fact that drama uses music and ὄψις in addition to λόγος: he merely shows how drama can be regarded as the limiting case of epic, when the element of narrative is at a minimum. Putting together these facts we see easily that Aristotle might very well remove from tragedy, comedy and the dithyramb their musical and spectacular elements and class the remainder along with λόγος ψιλὸς and λόγος ἔμμετρος. The class so formed would evidently correspond precisely to the meaning of our 'poetry.' Other passages, in the sequel of the *Poetics*, show, I think, quite clearly that Aristotle's thought tends in the direction of so limiting ποιητική.

Of the three principles of division used by Aristotle the

last two had already been distinguished by Plato (*Republic*, bk. III. ἃ λεκτέον, ὡς λεκτέον). The great advance made by Aristotle is thus the introduction of the conception of medium (ὕλη in his metaphysical terminology). This conception necessarily modifies in an important way the meaning of μίμησις. If the special function of ὕλη is not recognised, the imitation of a thing will be regarded as an imitation *in pari materiâ*. Hence from this point of view, which is Plato's, the copy of a thing must be either a mere repetition of the thing or it must differ from it as the unreal differs from the real, as appearance or illusion differs from reality. There is no other way of stating *how* they differ. But when it is recognised that two things having the same εἶδος may differ in respect of ὕλη, there is no longer any reason why the copy should be regarded as an attempt to rival reality. The imitation is simply the solution of an artistic problem:—Given $xy$ where $x$ is εἶδος and $y$ ὕλη, to express $x$ in terms of a new medium, $y'$. The relation of $xy'$ to $xy$ is naturally expressed by 'imitation' or 'μίμησις' in its ordinary meaning. We may call the other relation, that of $xy'$ to $x$ (or of $xy$ to $x$), 'expression.' Now both Plato and Aristotle use 'μίμησις' of the latter relation as well as of the former. In the case of Plato this is due to the fact that in his theory $x$ the ἰδέα is merely *another concrete* reality, over and above, and somehow external to, $xy'$. But the case of Aristotle is different. He must have been aware, to some extent at least, of the perpendicular relation, so to speak, of $xy'$ to $x$ as distinct in *kind* from the horizontal relation of $xy'$ to $xy$. We must therefore suppose that to him μίμησις had a meaning much wider than that ordinarily attached to the term.

In his attack on fine art, Plato insists that the artist has no real knowledge (ἐπιστήμη) of the object he imitates. In other words the artist gives a merely 'factual' representation of the object; he never sees behind the appearance, and copies the appearance merely, precisely as a photographic camera reproduces an object. But Aristotle's doctrine enables us to put the matter in a very different way. We may say that there is first the concrete object, then the εἶδος in the mind of the artist, then its expression by him. And we may go a step further. We may dismiss as unnecessary the *given* concrete reality, and start with the εἶδος in the mind of the artist. Plainly, for a true theory of art, expression is the essential operation, not imitation.

It might be objected to this interpretation of Aristotle that it hardly explains the prominent position given to drama among the 'poetic' arts. In drama it might be said we have the art of illusion at its height; speech imitated by speech,

action by action. The reply to this is obvious. The case seems one of 'imitation' *in pari materiâ*, but then it is not 'imitation' of a *given* object. So that just because it *is* 'imitation' *in pari materiâ*, we can be sure that the artistic interest lies in expression alone. After all, speech and action are themselves the chief cases of conscious expression in the real world.

Aristotle's real view that fine art is the expression of the universal, can be illustrated from many passages in his works. When for instance he says that music is the 'most imitative' of the arts, he can only mean that music most perfectly expresses ἦθος, which is itself of course imperceptible to sense. And in fact, as we shall see presently, he in a way regards music as the typical art, for he finds in the effects of certain kinds of music a guide to the special effect of tragedy. Another example is the well-known saying that poetry is φιλοσοφώτερον than history. For plainly in the former the universal finds free expression, in the latter it is thwarted by matter, by merely particular facts. It is hardly necessary to point out that we must at the same time take care not to emphasize unduly the universal element in poetry. We must keep in mind that for poetry it is essential that this element should be expressed in matter of some sort. It is in this respect that science differs from poetry. The whole aim of the former is to keep the εἶδος abstract, and therefore science uses not εἰκόνες but σημεῖα or σύμβολα, which never really *express* the εἶδος at all, but are of use merely to suggest the abstract εἶδος *quâ* abstract.

I may add for the sake of completeness that there is no explicit reference in Aristotle to the artist's *sense of medium*, that is, of the kind of expression appropriate to a given medium, for instance the way in which locks of hair should be represented in marble. In fact there seems to be only one reference to this idea in the whole of Greek literature (Athenaeus, XIII. p. 603 E—604 D).

For the abstract theory of æsthetic, there are two important passages in the fourth and fifth chapters, which contain, as I have already mentioned, an account of the historical development of poetry. The first is at the beginning of ch. iv. where the origin of poetry is referred to two αἰτίαι φυσικαὶ (= psychological conditions, we might say): the second is at the end of ch. v. where the length (μῆκος) of tragedy is distinguished from that of epic.

Aristotle begins his explanation of the two αἰτίαι φυσικαὶ by remarking that the tendencies 'to imitate' and 'to take pleasure in imitations' are innate in man. He illustrates the

former by the fact that man learns his first lessons (*μαθήσεις*) by means of imitation, the latter by the fact that we take pleasure in seeing imitations of objects which are themselves unpleasing, the reason being that when we see the imitations we take pleasure in recognizing them, in 'learning and inferring' (*μανθάνειν καὶ συλλογίζεσθαι*) what each of them is. Thus the two tendencies mentioned are made to depend on the natural love of knowledge. The ordinary interpretation of the passage identifies the *αἰτίαι φυσικαὶ* with these two tendencies. The objection to this interpretation is that these tendencies are not independent, but both are referred to the same *αἰτία*. Mr Bosanquet, following the reading of $A^c$, takes the passages otherwise. He finds the two *αἰτίαι* in the tendency to imitate and to rejoice in imitations, and the tendency towards knowledge. A similar objection can be made to this view. Its two *αἰτίαι* are not independent, and we should have expected Aristotle to refer the origin of poetry, not to two *αἰτίαι*, but to one, namely, the instinct for knowledge.

If we are right then in looking for two independent *αἰτίαι*, we may be sure that up to the point we have reached in reading the passage only one *αἰτία* has been mentioned, the tendency to *μίμησις*, regarded as a primitive way of knowing, in which the essence or *εἶδος* of a thing is apprehended, not abstractly, but concretely in the form of, say, a mimetic movement. And there is really no difficulty in finding the second *αἰτία*, in one of the following sentences, which begins: *κατὰ φύσιν δὴ ὄντος ἡμῖν τοῦ μιμεῖσθαι καὶ τῆς ἁρμονίας καὶ τοῦ ῥυθμοῦ...* Prof. Butcher translates as follows: 'Imitation, then, is one instinct of our nature. Next there is the instinct for harmony and rhythm...' This interpretation of the whole passage seems much the best. The objection to it lies, I fancy, in the abrupt way in which the instinct for harmony and rhythm is introduced. But I would suggest that the transition to the second *αἰτία* is to be found in the preceding sentence, which is to the effect that when an object imitated has not been seen before, so that the pleasure of recognition cannot be present, there may still be pleasure, which 'will be due, not to the imitation as such, but to the execution (*ἀπεργασία*), the colouring (*χροιὰ*) or some such cause.' Here plainly two kinds of pleasure which are necessarily independent, are referred to, and there is no difficulty in supposing *ἀπεργασία* and *χροιὰ* to be intended by Aristotle to correspond, roughly, in *γραφικὴ* to *ἁρμονία* and *ῥυθμὸς* in *ποιητική*. It is hardly necessary to point out that Aristotle's two *αἰτίαι* (to assume the correctness of our interpretation) are the two instincts, the imitative and the decorative, to which anthropologists assign the origin of art.

According to some anthropologists, for instance Mr Andrew Lang (*Custom and Myth*, last chapter), the latter instinct is really the more important. My conclusion then is that Aristotle supposes poetry (μίμησις διὰ τέχνης) to have been gradually developed out of instinctive mimicry (μίμησις διὰ φύσεως), having throughout as its aim the expression of order or beauty.

Although in the preceding divisions tragedy has been clearly distinguished from epic, at the end of the fifth chapter a fresh differentia is given, the ground of division being the length of the dramatic μίμησις, which Aristotle probably supposes to correspond on the whole to the length of the πρᾶξις imitated. Epic is said to be ἀόριστος τῷ χρόνῳ, while tragedy (the πρᾶξις imitated, presumably) is limited to a circuit of the sun or a little more. The difficulties of precisely interpreting this passage need not detain us, and its real meaning will be discussed more appropriately at a later stage. The passage is mentioned now, partly because it is the first explicit appearance of a consideration of *value*, partly because it is used in the definition of tragedy, to which I may now proceed.

As Aristotle himself remarks, the definition of tragedy follows from what has been already said. It is in fact a definition resulting from a division, after the familiar manner of Plato in his later dialogues. The definition as actually stated, however, contains an important addition, a statement of the effect (ἔργον or τέλος) of tragedy. To understand the appearance of this new conception we must keep in mind that throughout the *Poetics* there is, as it were, a background of teleological considerations. From time to time Aristotle completes his thought by bringing forward from this background conceptions that refer to the end of all fine art. There is, for instance, an obvious reference of the kind in the third line of the *Poetics* where he declares his intention of discussing how a plot is to be composed εἰ μέλλει καλῶς ἕξειν ἡ ποίησις, that is, if it is to be a good poem, capable of attaining the τέλος of poetry. I have already pointed out that the length of a tragedy is determined really by consideration of the good or, what is the same thing for fine art, τὸ καλόν.

Dismissing for the present all references of the kind, let us consider the part of the definition which results from what precedes.

If we neglect, for the sake of simplicity, the musical element in tragedy, the divisions which lead to the definition may be summarized thus: ποιητικὴ is divided into that which uses ἔμμετρος λόγος + the rest, the former class is again divided according as it represents people who are σπουδαῖοι or φαῦλοι κατὰ

τὸ ἦθος, the former class again being divided according as the representation is dramatic or not. Hence tragedy (1) uses ἔμμετρος λόγος, (2) represents οἱ σπουδαῖοι, (3) is dramatic. Corresponding to these marks we find tragedy defined as the μίμησις (2) πράξεως σπουδαίας... (1) ἡδυσμένῳ λόγῳ... (3) δρώντων καὶ οὐ δι' ἀπαγγελίας. The πρᾶξις represented is further described as τελεία καὶ μέγεθος ἔχουσα, a mark derived from the discussion of the μῆκος of tragedy. The πρᾶξις is τελεία because it is ὡρισμένη and Aristotle adds that it must have (some) magnitude because, as he afterwards explains, τὸ τέλειον may have none. τελεία πρᾶξις may be said to be to πρᾶξις as πρᾶξις is to κίνησις (or γένεσις). It means a *whole life* or a briefer set of events that determine the weal or woe of a lifetime.

If I am right in supposing that Aristotle's method of defining tragedy is intended to be formal and scientific, it obviously follows that the word σπουδαία must have the same meaning in the definition that 'σπουδαῖος' bore in the preceding divisions. It would be fatal to scientific procedure, if, while we were proceeding to the final συναγωγή, one of the terms used in the division should in the meantime have changed its meaning. If technical words are to be used at all, their meanings are to be determined, not from the ordinary use of language, but as it were from a set of precise equations. But we find that the traditional translation of the word σπουδαία in the definition of tragedy is 'serious' not 'noble' (or something of the kind). This seems to me to break the rules of scientific procedure. In fact one might say that it introduces a circle into the definition, for the meaning attached to σπουδαία is practically derived from 'tragedy' itself, the word that is being defined.

The chief argument for the traditional translation of the word is, I suppose, that it brings out adequately 'the implied antithesis to comedy' (Butcher, p. 224). The reference is to a definition of comedy, prefixed to the history of comedy in chapter 5. This definition fits in very ill with the context, and looks like a later insertion. It is hardly credible that Aristotle should have given at this point a definition of comedy, when he had not prefixed a corresponding definition of tragedy to the history of the latter. The definition of comedy, or rather of the kind of character or action represented, is to the effect that it represents a species of τὸ φαῦλον, namely, τὸ γελοῖον. But not only is there no corresponding limitation of τὸ σπουδαῖον in the part of the *Poetics* preceding the definition of tragedy but, as we shall see presently, there is no distinction like that of 'serious' from 'noble' in what follows, where the ἦθος and

πρᾶξις represented by tragedy are discussed with considerable detail. One cannot suppose for a moment that Aristotle used a distinction of such importance without explicitly referring to it.

Another argument in favour of the usual translation of 'σπουδαία' is that 'the transference of the epithet from the person to the action is a matter of no small import' (Butcher, p. 218), effecting, that is, a change in the meaning of the word. Now it is hard to see how this can be maintained in the face of Aristotle's reiterated statement that the πρᾶξις has the *same* ποιότης as the ἦθος which it displays. The ἐνέργειαι too that *produce* the ἕξις are the same in quality as the ἕξις. No doubt σπουδαῖος does mean 'serious.' But when once the word was adopted as the recognized technical or semi-technical adjective corresponding to ἀρετή, it could not at the same time retain all the meanings that it had in ordinary use. Much more evidence seems to me to be required to establish the customary rendering of 'σπουδαία.'

According to Aristotle there are two αἰτίαι of πρᾶξις, ἦθος and διάνοια, of which the former is more important, as indicated by the explicit reference to it by means of the adjective σπουδαία in the definition of tragedy. The subject of tragedy may thus be said to consist of three parts, πρᾶξις, ἦθος, and διάνοια. I will consider briefly the last two, before proceeding to discuss Aristotle's account of the first.

Aristotle's treatment of these two parts can, I think, be brought under a general principle, which may be explained as follows. The word 'πρᾶξις' is most frequently used in the sense of a *visible* act or line of conduct, and such a πρᾶξις may be said to have an obvious meaning. On the one hand, it is not a mere event, but is the act of an intelligent agent, who has an end in view; on the other, it has a certain quality, or, in other words, the fact that a particular τέλος is chosen implies a certain character on the part of the agent. (In a less strict sense, the act may be said to have intellectual 'quality' too.) Now, besides the visible πρᾶξις, in the case of ordinary conduct involving two or more people a certain amount of λόγος, or explanation to one another, of their thoughts, feelings, etc., is necessary. Still further in the case of μίμησις, λόγος or explanation of a new kind is required to make clear to the audience what is going on in the minds of the agents; for *that* is not expressed sufficiently in either πρᾶξις or the natural λόγος between the agents. If then we subtract the visible πρᾶξις which explains itself, the rest of the μίμησις will consist of parts which will be expressive or 'imitative' of what would not otherwise be 'manifest' (φανερὸν or δῆλον) to the other agents in the πρᾶξις or to the audience. This residuum of

what would otherwise be unexpressed taken as a whole is equivalent to *ἦθος* + *διάνοια*.

The expression or imitation of the *πρᾶξις* is called the *μῦθος*. But there are no special words for the *μίμησις* of *ἦθος* and of *διάνοια*. Hence both *ἦθος* and *διάνοια* are used in a highly ambiguous way, and an essential preliminary to understanding the passages in which these words are used, is to distinguish clearly between the two senses of each.

Both *ἦθος* and *διάνοια* are implied in a way, as I have said, in the visible *πρᾶξις*. We have only to ask then in what parts of the *λόγος* is each of them to be found? Aristotle naturally separates *προαίρεσις*, which is the *immediate* mental condition and equivalent of *πρᾶξις*, from other mental states. Its expression or revelation is *ἦθος* in the second sense of the word, in the sense of *μίμησις τοῦ ἤθους*. The most important passage bearing on this is translated by Prof. Butcher (following the Parisian MS. A°) thus:—'Character is that which reveals moral purpose; it shows what kind of things, in cases of doubt, a man chooses or avoids. A dialogue, therefore, which in no way indicates what the speaker chooses or avoids, is not expressive of character.' In the first sentence *ἦθος* seems to be taken in the sense, not of *μίμησις τοῦ ἤθους*, but of *ἦθος* itself. (See pp. 117, 315.) The objection to this rendering is that it hardly agrees sufficiently with Aristotle's actual ethical theory. We should rather expect him to say that *προαίρεσις* reveals *ἦθος*. Besides, 'in cases of doubt' seems too vague for '*ἐν οἷς οὐκ ἔστι δῆλον*' which would naturally mean 'in cases where it is not plain' (i.e. to the spectators) what the agent is really choosing or avoiding. For these reasons the reading given in Christ's text seems preferable[1]: it might be paraphrased as follows:—'*ἦθος* (i.e. *μίμησις τοῦ ἤθους*) is what reveals *προαίρεσις*, so that those *λόγοι* have no *ἦθος* where it is not made manifest what the man chooses or avoids, or where the speaker is not choosing or avoiding anything at all.' In a word, in the first kind of case the *προαίρεσις* is not expressed, in the second there is no *προαίρεσις* to express.

The third and final account of *ἦθος* occurs in ch. 15, but the details there given do not concern us.

*διάνοια* is explained, like *ἦθος*, in three passages, of which the last is most explicit, while the second is hardly different from the first. Part of the second Prof. Butcher translates thus:—'Thought, on the other hand, is that whereby we prove that something is or is not, or state a general maxim.' Again

[1] *ἔστιν δὲ ἦθος μὲν τὸ τοιοῦτον ὃ δηλοῖ τὴν προαίρεσιν· διόπερ οὐκ ἔχουσιν ἦθος τῶν λόγων, ἐν οἷς οὐκ ἔστι δῆλον, ὁποῖά τις ἢ προαιρεῖται ἢ φεύγει, ἢ ἐν οἷς μηδ' ὅλως ἔστιν ὅ τι προαιρεῖται ἢ φεύγει ὁ λέγων.*

it seems preferable to take διάνοια in the second of its two possible senses. The sentence would then run thus:—'διάνοια (= μίμησις τῆς διανοίας) is where they (= οἱ πράττοντες or λέγοντες; the word in the text is ἀποδεικνύουσι) prove that something is or' etc.

The third passage gives the fullest account of διάνοια. The key to it is to be found I think in the last sentence of it. Literally translated this sentence is as follows:—'For what would be the function of the speaker, if ἃ δεῖ (or ἡδέα or ἡδέα ἢ δεινὰ αὐτά etc.; the readings vary) were at once (or already) manifest (φανοῖτο) apart from what he says.' I take this to mean that Aristotle is here applying the general principle which I have ascribed to him, the need, namely, of explaining to the audience certain things which they could not otherwise know, and which they require to know in order to understand fully the πρᾶξις that is being represented. Interpreted by this light the rest of the passage is plain. It is to the effect that the function of διάνοια (in the second sense) is 'τό τε ἀποδεικνύναι καὶ τὸ λύειν καὶ τὸ πάθη παρασκευάζειν,' i.e. 'to prove and to refute, and to supply (to the spectators) πάθη' i.e. the πάθη of οἱ λέγοντες, and not as in the ordinary view to *excite* the feelings for instance of the audience. 'διάνοια' of course *does* effect the excitation of the feelings of the audience, but it achieves this, not directly, but by means of *expressing* the feelings of the agents. 'τὸ πάθη παρασκευάζειν' might very well mean 'to convey an impression,' but it could hardly be used with precision to express 'the excitation of the feelings,' for which some such word as κινεῖν or ἐμποιεῖν perhaps would be required. This interpretation seems to be confirmed by the phrase in the immediate context, ὅσα ὑπὸ τοῦ λόγου δεῖ παρασκευασθῆναι. It is confirmed also perhaps by the mention not only of ἔλεος and φόβος but also of ὀργὴ καὶ ὅσα τοιαῦτα as the πάθη to be expressed or excited, for ἔλεος and φόβος are the only feelings of the spectators that Aristotle consistently contemplates; but possibly the reference to rhetoric, under which art διάνοια is said to fall, would suggest the inclusion of other πάθη besides these two. In a word then I take Aristotle to mean that 'διάνοια' expresses *everything that goes on in the mind except* προαίρεσις. It is hardly necessary to add that in some cases πάθος is a visible emotion or directly audible by inarticulate cries.

Aristotle's account of the μῦθος or μίμησις τῆς πράξεως presents to us two points of interest, corresponding to the two teleological considerations that enter into the definition of tragedy. The other five μέρη of tragedy may almost be said to exist for the μῦθος, which is itself in turn the immediate

instrument by which the effect or effects of tragedy are produced. These effects are of two kinds. First there is the effect of *τὸ καλόν*, which is an end common to all fine art, and second there is the *special* effect (*ἔργον*) of tragedy, the *κάθαρσις* of the feelings of pity and fear.

The former effect is discussed in ch. 7, 8, 9. He there explains the conditions laid down in the definition, that tragedy shall be the *μίμησις* of a *πρᾶξις*, that is (*a*) *τελεία καὶ* (*b*) *μέγεθος ἔχουσα*. These conditions are independent, for a thing he says may be *ὅλον* (= *τέλειον*) without having *μέγεθος*. The first condition of *τὸ καλὸν* is simply of course that every work of art must contain unity or order (*τάξις*) in some degree. It is found at its simplest in *ῥυθμός*, the natural love of which as I have explained is one of the two *φυσικαὶ αἰτίαι* that give rise to fine art. This condition Aristotle explains with direct reference to poetry, whose *μῦθος* he says must have a beginning, a middle, and an end, in order to be *ὅλος*.

His explanation of the second condition (*b*) of *τὸ καλὸν* is more interesting, as it is founded on a comparison of poetry with painting. The reference to painting, it is true, has been doubted, but, I think, on insufficient grounds. It depends on the interpretation of the word *ζῷον*, which is Aristotle's usual example of a homonym. The two contexts from which the meaning has to be determined are these:—*ἐπεὶ τὸ καλὸν καὶ ζῷον καὶ ἅπαν πρᾶγμα ὃ συνέστηκεν ἐκ τινῶν οὐ μόνον ταῦτα τεταγμένα δεῖ ἔχειν...*: and *ὥστε δεῖ καθάπερ ἐπὶ τῶν σωμάτων καὶ ἐπὶ τῶν ζῴων..., οὕτω καὶ ἐπὶ τῶν μύθων....* The meaning of *πρᾶγμα ὃ συνέστηκεν ἐκ τινῶν* and *τὰ σώματα* seems plain from other passages in Aristotle, for instance *De Animâ*, 412 a 11, where he identifies *οὐσία ὡς συνθέτη* (substantia composita) with *σώματα*, and divides these into *φυσικὰ σώματα* and the rest, the former class again being divided according as they are *ἔμψυχα* or *ἄψυχα*. Thus animated bodies would seem to be 'composite' in the fullest sense of the word. '*ζῷον*' then in the present passage in the *Poetics* must be equivalent to 'picture,' in which sense however it would naturally suggest to a Greek the picture of a *ζῷον* in the sense of *σῶμα ἔμψυχον*. Other reasons could be given for this interpretation of '*ζῷον*,' for instance the phrase in ch. 23, *ἵν' ὥσπερ ζῷον ἓν ὅλον ποιῇ τὴν οἰκείαν ἡδονήν*. It would surely be absurd to talk of an animal as giving an *οἰκεία ἡδονή*. Again, the word *γεγραμμένα* in *Phaedrus* 264 c (quoted by Prof. Butcher, p. 177) really puts the matter beyond doubt.

Assuming then that Aristotle has in view a comparison between painting and poetry, we find a remarkable feature in his treatment of the former. We might expect the fact that

painting does not involve movement to appear. But on the contrary we find that Aristotle reduces the μέγεθος of painting to terms of time, to the length of time occupied by the κίνησις of which the perception (αἴσθησις or θεωρία) of the picture consists (cf. *De Animâ*, 425 a 16 where, discussing the κοιναὶ αἰσθηταί, he says of them, ταῦτα γὰρ πάντα κινήσει αἰσθανόμεθα, οἷον μέγεθος κινήσει). In the *Metaphysics* (1078 a 31) Aristotle explains that τὸ καλὸν is wider than τὸ ἀγαθὸν because it applies to τὰ ἀκίνητα, whereas the latter does not, and goes on to divide τὸ καλὸν into three εἴδη, τάξις, συμμετρία, and τὸ ὡρισμένον. Of these συμμετρία would apply chiefly to mathematical figures and relations, and in art to architecture and to the motionless relations involved in sculpture (see for instance Galen, *de plac. Hipp. et Plat.* 5) and perhaps in painting, while τάξις would refer rather to order in time, τὸ ὡρισμένον being perhaps common to both space and time. However that may be, Aristotle in the present passage of the *Poetics* reduces the beauty of the object seen to the τάξις implied in our perception of it. Since however the time taken in the perception of a ζῷον is relatively short, a ζῷον that is καλὸν may be described as εὐσύνοπτον, while an effective tragedy must have a length that is εὐμνημόνευτον. I may point out that this way of regarding the beauty of a picture naturally reminds us of *De Animâ* 424 a 27, 426 b 3 where it is stated that all (efficient) αἴσθησις depends on a proportion (λόγος). If the stimulus (τὸ ποιοῦν) is too great, the λόγος is dissolved and perception ceases. τὸ καλὸν thus corresponds simply to αἴσθησις in its state of highest efficiency, when its ἐνέργεια is at a maximum. If we use 'intensity' for the magnitude of a force or activity we can express Aristotle's meaning more definitely by saying that the ἐνέργεια whose intensity is greatest, is the most beautiful, so long as its unity (λόγος, τάξις) is preserved. It is to be observed that the doctrine of the *Poetics* supplements that of the *De Animâ*, for while the latter mentions only the failure of αἴσθησις when the stimulus is too great, the former takes account of the case when the stimulus is too small (when the ζῷον is πάμμικρον).

We can now see clearly how tragedy differs from epic. The latter is too long, so that the attention becomes tired, and tends to diminish in intensity. Tragedy on the other hand is exactly the right length, that is, the attention can be stimulated to the greatest possible degree. At the end of ch. 7 Aristotle defines the due μέγεθος of tragedy: it must contain a μεταβολὴ from one to the other of the extremes of πρᾶξις, from δυστυχία to εὐτυχία or *vice versâ*.

The aim of tragedy is declared in the definition to be the

*κάθαρσις* of pity and terror by means of these emotions themselves. Before Aristotle the aim of poetry had been regarded as either of two things—(1) to educate, chiefly to improve *ἦθος*, (2) to give pleasure. But on Aristotle's principles *ἦθος* is not important in itself, as it exists merely for *πρᾶξις*, and he seems accordingly to have intended '*κάθαρσις*' to express the view that some kinds of poetry may do good, neither in the way of improving the *ἦθος*, nor of giving pleasure merely, but in a third way, by exciting the feelings. For feeling (*πάθος*) is classed with *πρᾶξις* in opposition to *ἦθος*, and is in a sense a kind of *ἀπάθεια* or *ἐνέργεια*. Such *πάθος* or expression of the feelings must do good, since *ἐνέργεια* is better than mere *δύναμις*. Besides, it will make for *ἀρετή*, for the alternative is irregular and violent outbursts of feeling, and it will give pleasure too, for all *ἐνέργεια* is accompanied by pleasure. But I will not discuss further the question of the meaning of *κάθαρσις*, a subject treated at length in all works on the *Poetics*. Little is known of *κάθαρσις*, beyond the fact that it is an idea taken by Aristotle from medical science, in the first place to explain the effect of a certain kind of music, and then applied to tragedy.

The immediate end of tragedy is the excitation of the feelings of *ἔλεος* and *φόβος*. This end Aristotle of course simply assumes, and then proceeds to investigate its bearing on the plot, and, through the plot, on the *ἦθος* represented. I do not propose to enter into the details of this investigation, which begins in ch. 9, and occupies (with a digression on *ἦθος* considered in itself apart from plot) the following eight chapters. Its main results may be stated briefly as follows:

The *μεταβολή* represented is now determined as a change from *εὐτυχία* to *δυστυχία*. In general the latter will take the form of an actual visible *πάθος*, such as *οἱ ἐν τῷ φανερῷ θάνατοι*. The tragedy will be more effective, if the *μεταβολή* is a *περιπέτεια*, which Aristotle defines as *ἡ εἰς τὸ ἐναντίον τῶν πραττομένων μεταβολή*, 'a change by which a train of action produces the opposite of the result intended.' This again will be most effective, when it is accompanied by an awakening or recognition (*ἀναγνώρισις*) on the part of the hero, for instance, when he finds out that a person, previously treated as an enemy, is really a friend or relative. A visible *πάθος* is not required; the purely mental horror of a situation will achieve the required effect. The nature of the *ἦθος* represented is determined by the consideration that we feel *φόβος* only in connection with people *like ourselves*. The hero, therefore, though good on the whole, must not be *σφόδρα ἐπιεικής*, and must fall into misfortune *δι' ἁμαρτίαν τινά*.

We are now in a position to make clear the only remaining question of importance, namely Aristotle's doctrine that ἦθος is subordinate to μῦθος. This doctrine is supposed to be at variance with modern theory, and has been more adversely criticised than any other part of the *Poetics*. Mr Bosanquet considers the question at length. He quotes the passage in ch. 6, and the following words may perhaps be taken to represent his main conclusion as to Aristotle's meaning: 'he may not have been contrasting the plot, as a mere puzzle and solution, with the portrayal of individual human character, but he may rather have intended to oppose the man as revealed in action, or in speech which contributes to the march of incident, with monologue or conversation simply intended to emphasize this or that type of disposition in the interlocutors' (p. 73). It is not difficult to see that this is a correct interpretation of Aristotle's view. According to Aristotle ἦθος ought not to be separated from πρᾶξις. The connection between them is vital, for ἦθος exists for πρᾶξις. Good ἦθος is simply good ἕξις, that is, ἕξις from which good πρᾶξις is likely to result. The πρᾶξις has the *same* quality as the ἦθος from which it springs. Hence 'ἀήθεις τραγῳδίαι' (ch. 6) cannot mean tragedies that have no ἦθος in *any* sense of the word, for the πρᾶξις represented must imply ἦθος of a determinate kind, but must mean rather tragedies that contain few or no λόγοι expressive of ἦθος. Such tragedies would naturally be contrasted with tragedies that have no πρᾶξις and consist wholly of ῥήσεις ἠθικαί, i.e. λόγοι expressive of ἦθος as it is in itself entirely apart from πρᾶξις. But the most important passage bearing on the question is that in ch. 13, where ἦθος is discussed for the last time in its relation to μῦθος, and where it is explained that the misfortunes of the hero should arise δι' ἁμαρτίαν τινά. It has been suggested that ἁμαρτία is intentionally used, not ἁμάρτημα, to convey the idea of 'an error due to a flaw in the character' (cf. the distinction between ἀδικία and ἀδίκημα in *Nic. Eth.* bk. v. ch. 8, and the definition of the subject of comedy, *Poet.* ch. 5, where ἁμάρτημα, according to this suggestion, is plainly the right word to use). If this interpretation is correct, we have here a decisive instance of the inseparability of μῦθος and ἦθος. But in any case the drift of the whole passage implies that ἦθος does not necessarily mean to Aristotle a simple generic type (Bosanquet, p. 73), but that its complexity is precisely on a level with the complexity of the plot.

At another time I may be allowed to discuss in these pages some of the more general questions connected with the *Poetics*, especially its relation to other Greek theories of æsthetic.

## VI.—DISCUSSIONS.

### ANTIPATHY AND SYMPATHY.

The analysis of antipathy and its relation to sympathy is a subject which may be worth more detailed and careful study than it appears as yet to have received. It is much less easy to observe in this case than in that of sympathy, and the state itself is happily more rare. In sympathy, as a pleasant state and still more as one morally approved, we do not tend ordinarily to suppress the emotional manifestations: they continue naturally with us and can be studied with ease. So sympathy, and all the social emotions for which it furnishes material, have been observed and described with much more care than has as yet been devoted to antipathy and its unsocial brood. The latter subject may be less conducive to edification. It is certainly more disagreeable and, therefore, more difficult to pin down in consciousness and describe. I have endeavoured as occasion —not very frequent—arose, to pin it down and scrutinise its features. These few remarks on its nature are the result of this scrutiny.

There is a pseudo-sympathy which consists in the arbitrary projection of one's own joys, sorrows, and virtues into another mind, —a work of pure imagination in which the other is seen as the self, without much reference to the signs he gives of his own idiosyncrasy. Similarly there is a pseudo-antipathy, often remarked but very curious, which consists in the careless and arbitrary interpretation of another person's acts and expressions in accordance with the worst side of one's self. Thus we ascribe to him our own defects, and, in proportion as we abhor them, the abhorrence is transferred to him. Just as we project our virtues into another and love them, so do we also project our faults and hate them. It may be that there is a certain wrong-headed sense of cleansing in this hatred of one's besetting sin either realised or imagined in another.

Antipathies—and sympathies—of this kind, being grounded *solely* on a false imagination of character or state of mind, may be called imaginary, and they are apt to vanish on a better acquaintance. They are unreal of their kind because in the extreme where projection of the self into the other becomes everything and projection of the other into the self nothing at all. In the ratio of these

two projections the real types vary indefinitely, and shade off, as the arbitrary personal projection prevails, into this pseudo-type at the end of the scale.

True antipathy, like true sympathy, not only contains but starts from, a true intuition, however obscure and confused, of the other's mind. The most peculiarly sympathetic and deepest sympathies—those which make people think of each other as affinities—have a very profound, extended and, for the most part, obscure intuition at their base. The intuition is so total that in the main its content must lie outside the region of clear consciousness. Hence the delightful quality of mystery—a mystery in this case to be trusted as one trusts oneself. A limited intelligible sympathy extends self beyond self and is very good; but the extension of self without clear limits—not by infatuation for, but by sympathy with, another—is much better, granted always that we know enough to trust it.

This intuition of another, often profound and extended, nearly always in part obscure, appears to be founded in emotional imitativeness. Emotion is always in part obscure, and, in case of imitation, the obscure part may very well come up first. *A* more or less confusedly takes on the feelings of *B*. Now, so far as my observation goes, antipathy originates in exactly the same way. The well marked specimens are most fruitful for study; and, certainly, violent, soul-cleaving antipathies exist only between those who feel and read each other closely, and with some consciousness of being drawn into each other *against* the will.

This is how I find it to occur. Antipathy begins like sympathy in emotional imitativeness; *A* is drawn out towards *B* to feel what he feels. If the new feeling harmonises, distinctly or obscurely, with the whole system of *A*'s consciousness (or the part then identified with his will), there follows that joyful expansion of self beyond self which is sympathy. But if not—if the new feeling is out of keeping with the system of *A*'s will—tends to upset the system, and brings discord into it—there follows the reaction of the whole against the hostile part which, transferred to its cause in *B*, pushes out *B*'s state, as the antithesis of self, yet threatening self, and offensive. This is more than mere dislike. We are indifferent to those who do not draw our sympathies, and we dislike those whom we realise as of a nature not to be sympathised with by us. But dislike is a cool state, does not upset our equilibrium—has no thrill about it or not much, unless indeed anger be superadded. Especially it has, as distinguished from antipathy, little of the physical accompaniment, on which, as the whole of emotion, Prof. W. James lays so much stress. Antipathy is full of horrid thrill: it stirs the physical being like a shock: it is a thing of nervous tremors and heart-pangs and even deranged digestion. Sometimes, it seems to begin and concentrate itself throughout in these symptoms—the well-known symptoms of strong painful emotions, as if the whole physical being were compelled to reverse its action and run counter to itself.

Unpleasant symptoms like these arise because the objectionable person comes into the room. The curious thing is that the presence of such a person should excite so much interest. The imagination of the same will sometimes, up to a certain point, produce similar effects; but there seems to be an immense difference in degree between the effect of the imagined and the real presence here, as there is also in the case of sympathy—more difference probably, because it is natural for the healthy mind to shut out antipathetic imaginings with force of will.

It is clear that the physical presence of the antipathetic object arrests attention—fascinates. But more than this is implied in the effect. A physical presence may arrest attention by its deformity of actual body or suggested mind. It may repel, but without the antipathetic sting. The peculiar horror of the antipathy springs from the unwilling response to the state abhorred. We feel ourselves actually like the other person, selfishly vain, cruelly masterful, artfully affected, insincere, ungenial and so on. We feel dramatically like that person, and, summoning all our moral energy to abhor the feeling, we abhor it also in the person who provoked it. If this be so, it is easy to understand the deadly effect of the physical presence. With it there come into the room the physical signs of those emotional states which enforce the superficial response we dread. The perception of these physical signs leads to the instinctive imitation of them, not actually but nascently, and this, being the outside circle of the total emotional state, tends to involve that state more or less obscurely in its train. This is, so far, just what happens in the initial stage of intuitive sympathy: through the nascent imitation of external signs the feeling is taken on. Ordinarily the imitation is only nascent; I get just as far in taking on the other person's pose of the head in straining after effect, as I do in making with *my* vocal chords the notes of a song to which I listen in perfect silence. Thus, just as I am conscious of ability to join in the song, so am I conscious of a capacity to attitudinise as she does and indulge in a thirst for admiration *if* I choose. In such cases people sometimes ask their intimate friends whether they do appear like those persons who affect them so. It is only the presence of the "if" that makes the difference. There is some affinity between those who antipathise, but the affinity is superficial, the divergence rooted deep. That which comes upon me in consequence of the other person is incongruous with something settled and permanent in me—very possibly my moral ideal of self. Incongruity, when too serious for laughter, is pain, and is followed by a revulsion from that which hurts. On the other hand, if the induced emotion is congruous with my moral ideal and lifts me up to a more perfect unity with it, then I throw myself joyfully into the emotion and draw near with affection to the inspiring presence.

Thus the imitative instinct is at once the source of our social and our anti-social nature, on the emotional, as distinguished from

the rational, side. If that which I imitate is such that I could have originated it, then, not only do I take it on, but I take it in, responding to it, and this is sympathy. If, on the other hand, it is impossible to my nature *as a whole*, and yet, by imitative instinct, it gets into my imagination, then I fling it out again with loathing as a foreign thing, and this is antipathy.

Confirmatory evidence may be found in study of the state intermediate between antipathy and sympathy, wherein we, more or less confusedly, take on another person's mind, without either taking it to us or casting it from us. This is a cool state that lends itself well to study when it occurs. Probably it is not very common, but the psychologist may find his opportunity in this that its extremes certainly tend to return to its type when made the object of study. In this state the subject stops short of sympathy and antipathy alike, but the other person has caught hold of the imitative attention, and momentarily imposed, though obscurely, his leadership in feeling. This seems to be little more than pure imitation and hence the obscurity of the feeling, which indeed hardly goes beyond the outer circles of itself. If I knew what it is I am feeling I should know whether I approve of it or not. But I do not know, and am only aware that it is something like what the other person is feeling, or would be if it were to get clearly into my imagination. Mannerisms in another sometimes affect us thus.

The facts seem to be these. In the case of an echo to the other so obscure as this, we cannot strictly be said to feel his feelings at all. But we are moved by the signs of his feelings, as he is moved by the feelings themselves. This obscure state may continue indefinitely, or the feelings corresponding may presently wake up followed by sympathy or antipathy more or less. The exception to this last effect is when they turn out so unimportant as to excite the sense of humour and thus escape antipathy. When the obscure state continues indefinitely it gives rise to a curious sense of irritation against the person because of his unintelligibility. This may amount to dislike but is hardly antipathy, unless evil affinities are suspected, in which case we get the obscure unexplainable antipathy which is common enough.

What all these obscure echoes show more unmistakeably than the clearer ones is the very external character of the first stage. *A* is moved before he feels—moved as *B* is moved. It is not the feeling directly, but the signs of the feeling, which he imitates. His physical being is drawn into unison with *B*'s, and his emotional being is apt to follow, though not necessarily. When it does not follow, there is friction and vexation more or less; when it does follow, there is sympathy or antipathy more or less. Sympathy affects the emotional being as Truth affects the intellect. Antipathy is the recognition of an emotional error. The obscure state affects us like the unknown.

Further confirmation may be derived from consideration of the kinds of persons who, according to the theory, would be apt

respectively to provoke and be affected by all these states. Who are these and do they coincide in character with the corresponding persons in our experience? Every reader will best answer the second part of the question for himself. The writer may content herself with answering the first.

Inexpressive people could not be expected to provoke the states as described. This power obviously must belong to the persons who are free in the manifestation of their moods, who have expressive faces, expressive movements of limb, whether aided by eloquent speech and frank nature or not. Gesture is the "magnetism" of the public speaker, and the simple means, though a very complex means, by which men draw other men to follow them, to wonder at them, or to hate them. This we must expect if the incipient imitation of gesture is the means of revelation in another of the man behind. At the same time we should expect that all advantages which show outwardly strengthen the effect—good looks, abundant health and physical energy, a dignified presence and above all, when they show themselves in the presence, a spiritual vitality and concentrated will.

The emotional imitation itself is consequent, first on quick and accurate observation of the other, and secondly on mobility of imagination by which the emotion is constructed from within to join the circle of effects from without. Moreover it would seem that muscular mobility is another requisite, since the conditions of the physical response require that there should be much readiness and rapidity in adapting muscular activity to new forms under the suggestion of vision or visual imagination. Observation, muscular adaptability, imagination are all required for proficiency in the pathetic states. This is the theoretic conclusion and it will be agreed that it is consonant with fact. General mobility of brain and nerve covers all the conditions of the intuitive gift.

For many sympathies in the course of a lifetime it would seem that a wide and complex, as well as mobile, nature is required. For decided antipathy a strong nature of marked individuality, but mobile imagination, is essential. Antipathy stands specially in need of mobile imagination as the means of access while certainty of character ensures the subsequent repulsion. The two characteristics of breadth and strength may be found, and more often than not probably are found, in the same person. Then we should expect to find many sympathies and a few marked antipathies not lightly to be disregarded. This is just what experience tells us. The narrower nature has many antipathies, but the permanence of these depends on the firmness of the individual character. Emphatic it must be for antipathy however brief.

A third type occurs which should be noticed. When individuality is not marked, but the imitative instinct good, we have a nature, not very capable of deep sympathy or strong antipathy, but prone to take on the colour of its neighbour for the time being. This is the fluid impressionable character that prospers amidst good

surroundings, but yields to the influences of evil company. In the extreme case it is an instrument on which any other can play any tune.

SOPHIE BRYANT.

---

## THEORY AND PRACTICE.

IT is commonly held that a man may, in various departments of inquiry, have theoretical knowledge without practical knowledge; that the cultivation of theoretical study may tend to interfere with the habit of mind required for practice: and even sometimes that what is doubtless true in theory turns out untrue in practice. Without denying some validity to each and all of these oppositions, I think that, as commonly applied, they involve some confusion of thought, which it is the object of the present paper to clear up.

I would first distinguish a lower and a stricter sense in which the term "knowledge" is sometimes used. In a certain sense, I suppose a low organism might be said to "know" the difference between food and foes, if it were clear that it systematically went after the former and moved away from the latter. When practical knowledge is attributed to man, it often similarly includes an element manifested in instinctive action—unconscious or semi-conscious—and not in conscious cognition. The effects of experience cause a man to respond in a subtle and complex way to a stimulus from without; and sometimes the response has to be so quick that he does not consciously form a practical judgment before acting, much less a consciously reasoned judgment,—*e.g.* as in playing a game of skill where promptitude is necessary. In such cases the response usually requires not merely a trained subtlety of perception—what may legitimately be called practical but unconscious knowledge—but also an adaptation of the muscular system to the sensitive and cerebral system, which is not properly knowledge, even unconscious or implicit.

I suppose this is usually the case with operations of Fine Art. *E.g.* in painting, I suppose a man may be a fine critic of painting without being a painter, and may exactly describe defects without being able to remedy them: his deficiencies not being cognitive at all, but lying in want of perfect adaptation of his hand to his eye.

It would be better to refer to this as practical *skill*, rather than knowledge: when it is clearly distinguished, it is evident that a man may have knowledge without skill—so far as this element of skill goes—and therefore *a fortiori* theoretical knowledge without practical skill.

In ordinary life a practical man is to some extent a man who has what I may call organic skill of this kind: but more often his "practicality" is manifested in rapid and only semi-conscious foresight

of consequences, and instinctive or semi-conscious choice of the means of avoiding them. That is, it lies in what may be properly called knowledge of particular facts, but knowledge semi-conscious or implicit. All, I think, would admit the need of intellectual operations of this kind in occasions that require rapid action; and the impossibility of adequately supplying their place by conscious knowledge and method. At any rate it is not with this instinctive or semi-conscious foresight that I am now concerned. It is in its application to express and completely conscious knowledge that the antithesis between theory and practice seems to me usually to involve some vagueness or confusion of ideas, which it is the main object of this paper to consider and dispel.

There seem to me to be four different distinctions—partly, but only partly coincident—which are liable to be confounded in this antithesis as currently used:

1. The distinction between what I may call "book-knowledge" and first-hand knowledge.
2. The distinction between abstract science and concrete science.
3. The distinction between general knowledge and knowledge of particulars.
4. The distinction between science and art, *i.e.* between knowledge ordered grasped and pursued with a view simply to the communication or attainment of knowledge, and knowledge ordered grasped and pursued with a view to the attainment of some utility other than knowledge.

I have tried to arrange these four distinctions in the order in which their partial, but only partial, coincidence may be most clearly seen.

1. By "book-knowledge" I do not mean the merely verbal knowledge produced by pass-examinations—the knowledge that merely exercises the memory.

I mean rather a kind of knowledge which is liable to be produced by a system of honour-examinations; in which the general conceptions, principles and methods of reasoning of the subject studied are intelligently apprehended, and even illustrative particulars on the whole correctly reproduced; but where, owing to the inevitable imperfections of all verbal communication of ideas, the conceptions and images called up by the words lack the precision and clearness, the fulness and vividness which they would have if obtained through or along with sense-perception and actual experience.

I need not enlarge on the deficiencies of this kind of knowledge. What I rather wish to point out is that the difference between book-knowledge and first-hand knowledge is liable to be too sweepingly identified with that between abstract and concrete and that between general and particular. Now no doubt men commonly get their abstract and general knowledge mainly through books—or other verbal communication—and their concrete and particular knowledge partly through personal experience. But the deficiencies

of book-knowledge are I think just as marked when the knowledge derived from books is particular knowledge: in fact the difference between generalisations thus derived and those vivified by personal experience is very similar to the well-known inferiority of even good second-hand testimony to particular facts as compared with first-hand testimony.

2. I pass now to the second distinction, between abstract and concrete knowledge. This, of the four distinctions which I am trying to distinguish, is perhaps most prominent in the popular view of the unpracticality of theoretical students. They are supposed to put forward inferences as to actual facts, forecasts of the effects to be expected from actual causes, which—though doubtless correctly deduced by the processes of abstract reasoning on which the theorist is supposed to concentrate his intellectual activity—are found to be invalid when brought to the test of experience.

Now it cannot be denied that this is sometimes the case with the conclusions of theoretical students: but—so far as my own studies have led me to notice this kind of failure—I should say that it happens not because the reasonings of the theoretical student are too abstract, but because they are not consciously abstract enough. Abstract reasoning, in which the conceptions and premises used are artificially simplified with a view to greater exactness, is quite indispensable; nor is it misleading, unless the theorist allows himself to mix it up confusedly with concrete reasoning. Doubtless the artificial simplification may go too far so as to render the abstract reasonings useless as an aid to the comprehension of concrete fact; but it is not usually this defect alone which causes the theorist to make practical mistakes; it is rather when the abstract conceptions are nearer to the facts that he is led to confound them with adequate conceptions and to venture on inferences contradicted by experience. It is, in short, because he has a wavering and imperfect grasp of the distinction between abstract and concrete reasoning in his department of study; which yet it is his special business as a theorist to keep clear and precise.

This, at least, seems to me the case in the region of political economy and politics, in which the popular censure of the theorist often seems to me to hit the wrong point. But, granting the general validity of my answer, that the real error lies in *defect* not in *excess* of abstraction,—it may still be urged that even if the abstract reasoner retains a full consciousness of the artificial simplification of the premises on which he proceeds, and of the consequent imperfection of the correspondence between his conclusions and the facts, he will be somewhat disqualified by his habit of mind to make a good estimate of the force and effect of the further elements that have to be taken into account, before he draws any inference as to actual fact: that the man of practical experience, who is habituated to reason on the whole matter inexactly and empirically, is more likely to estimate these omitted elements rightly.

I think there is some force in this; and probably it is rather a

difficult matter to decide whether the theorist or practical man is most likely to be right in cases where a mixed forecast of this kind is required :—problems of which some of the elements can be treated by exact reasoning while others have to be estimated roughly and reasoned about in a vague empirical way. Probably the decision of this question will vary indefinitely in different cases. All I would say generally is that assuming that the practical man who has not vitiated his empirical tact and instinct by abstract reasoning is likely to judge better than the theorist of some important considerations, still it is the theorist—unless he is an incompetent theorist—who should be able to discern what these matters are better than the practical man: since the latter is liable to apply his rougher methods impartially to all elements of the question, whether they are capable of exacter treatment or not. Perhaps in some cases the best result would be attained by a division of labour somewhat analogous to what we are accustomed to in the English administration of law—I do not mean the division between questions of law and questions of fact, but the cooperation in the judgment on questions of fact which is brought about by the judge summing up for the jury. That is, the theorist should be allowed to define the parts or elements of the question on which the judgment of the man of common sense and practical experience is, in the present state of knowledge, to be preferred to his own.

3. On my third distinction between general knowledge and particular knowledge there is little to say except to point out— as I have done—that it is liable to be confounded with the distinction between abstract and concrete science. Of course there are some classes of theoretical students, who, by the nature of their studies, have no need of particular knowledge—*e.g.* pure mathematicians—but these are precisely the students who have no share in the popular distrust of theorists: at least I never heard of any attack on a pure mathematician for being too theoretical! And, in the present age of thought, in all studies that aim at knowledge of the concrete world, physical and social, a theorist who despises particular facts is an anachronism: he is as much opposed to the stream of theoretical opinion as he is to the instincts of common sense.

4. It is owing to this full, and continually increasing recognition of the importance of knowledge of particular facts for complete theoretical grasp of a subject, and of the ascertainment of particular facts for the progress of theory, that the scope and bearing of the fourth of my distinctions—that between Science and Art—seems to me to be commonly somewhat misapprehended. In speaking of Art I mean to use the term in a wide sense, in which Art includes all systematization of knowledge with a view to the production of a result other than knowledge. And in what I am now to say I consider the processes of Art only so far as they contain express knowledge and explicit reasoning; I leave out of account the element of practical skill and empirical tact, the unconscious or semi-conscious intellectual processes of which I have before spoken.

Even with this limitation, I quite admit the fundamental importance of the distinction between Science and Art: I admit that the knowledge required for the purpose of Art has to be selected and ordered in a manner quite different from that in which it is selected and ordered for the purpose of Science. And I think that the antithesis between theory and practice is most properly understood as equivalent to this. Still I think that the difference between the intellectual habits which scientific and practical pursuits respectively require and foster is often exaggerated, owing to a confusion of this distinction with one or other of the two last considered—between abstract and concrete science, and between general knowledge and particular knowledge. I think that when the importance of the exact ascertainment of particular facts for the completeness of theoretical knowledge is fully realised, it will be seen that the faculties and processes needed for the solution of scientific and practical problems are largely the same. Either gives scope for very various intellectual gifts and habits of work: there is hardly any gift and habit important in the one which is not important in the other. In both cases the faculty and the process of assimilating what is already known are profoundly different from the faculty and the process of independently ascertaining what is as yet unknown: and the need of both kinds of faculty and the relative importance and value of the two would seem to be approximately the same in both cases. In either kind of work there is full scope and use for the critical mind, apt and subtle in discovering differences and discrepancies, and also for the constructive mind, quick in seizing resemblances and inventive of fruitful combinations. In both cases, again, the constructive gift, if duly balanced and controlled by self-criticism and patient testing, is the more rare and valuable: while in both cases equally, if not thus balanced, it is dangerously liable to lead its possessor astray and produce constructions ingenious but unsound, and really useless for the purpose for which they have been devised. In both cases too such constructions, though ineffective for their immediate end, are sometimes indirectly useful as suggestions, pointing the way to sounder work.

I have dwelt on this perhaps rather obvious parallel: partly because it seems to me that the conception of a "theorist" formed by practical men is often the conception of a rather inferior species of what I have called the constructive type of mind; the mind that is fertile in new ideas of little or no value, inventions more or less ingenious, which, however, always come to nothing in practice, owing to the inventor's imperfect grasp of the conditions of the problem which he has set himself to solve. In calling such a man a theorist, the practical person vaguely implies that he has missed his vocation in attempting practical work, and that his gifts would find a more appropriate sphere in some non-practical line of study. Now my point is that if a man of this kind is quite useless in practical work, he would probably be quite useless in theoretical work: if in the sphere of Art he invariably develops impracticable fads, then

probably if he took to Science, he would invariably discover unmistakeable mares' nests. If on the other hand he is found not quite useless in the latter sphere, it is probable that he would be not quite useless in the former; if his theoretical constructions, though they break down when carefully compared with the facts, are yet ingenious and fresh enough to stimulate new inquiries ultimately productive of new truth, it is probable that in the practical sphere his unworkable inventions would be found to have the same quality of suggestiveness. I do not say that this would always be the case: only that there is no general reason for supposing that a semi-effective intellect of this kind, with originality unbalanced by sober judgment and patient industry, would be decidedly more at home in the one sphere than in the other.

It may perhaps be said—sarcastically—that whether a "theorist" of this type is or is not of any use in theoretical work, we should advise him in his own interest to stick to it, because he runs less chance of having his futility found out: for in practical work his inventiveness will be put to stricter and clearer tests: if his new machine or his new chemical process does not work, it will be manifest and undeniable that it does not work; but in the region of theory wild ideas and baseless hypotheses have often enabled a man to win fame and following for a time. There is something in this; but this difference again is less than is often thought. It must be remembered that arts as well as sciences differ widely among themselves in respect of consensus of experts and exactness of method: and that in comparing the strictness of testing given to new ideas in theoretical and practical work respectively, we must compare an art of which the method is established and exact with a science of the same kind, and not with a department of theory in which the method is loose and controverted. A professed new discovery in physics or chemistry may be tested as strictly as a new invention: at the least, if it is a hypothesis not admitting of absolute proof or disproof, it must if it finds any acceptance fit a mass of exactly known facts better than the conceptions it displaces: and if it does this, it will have served the progress of science even though it may be ultimately discarded. It must be admitted that the same cannot usually be said of new ideas and theories in Psychology and Sociology; but then on the other hand the utility of new plans and methods in the corresponding Arts of Education and Politics does not admit of strict testing, as a mechanical or chemical invention does. *E.g.* if, after half a century, opinions are still divided as to the merits of Mill's theory of International Values, the same may be said of the Bank Charter Act of 1844.

H. Sidgwick.

## VII.—CRITICAL NOTICES.

*The Foundations of Belief: being notes introductory to the study of Theology.* By the Right Hon. Arthur James Balfour. London: Longmans, Green & Co., 1895. Pp. viii., 356.

This is a charming book to read but a hard one to review, for it is not only not systematic, but wilfully unsystematic. Mr Balfour disputes all systems and sets up none of his own. This makes the critic's office not less but more difficult for a man who has had very little time to give to philosophy for a dozen years past; and I am emboldened to undertake such an office only by two considerations; first, that although a reviewer in *Mind* is answerable for his own opinions, the Editor is answerable for the reviewer being there; secondly, that Mr Balfour himself is not a philosopher by profession, and therefore there may be a certain appropriateness in his book being reviewed by an amateur. As an amateur I take leave to put forward among his merits one that has nothing to do with the validity of his argument or the correctness of any conclusion expressed or implied by him. Whatever may be the next vital movement in philosophy here or elsewhere, Mr Balfour will have done much to bring back the good days of Berkeley and Hume when philosophy could speak English. Mr Balfour's arguments, or some of them, may be misconceived, but nobody can call them obscure; we may not be able to dance to his tunes, but the instrument is admirably played. Whoever accepts his challenge, therefore, is bound to deliver an answer in terms that educated Englishmen can understand; and already those philosophers who have replied to Mr Balfour seem to have been stirred into surpassing themselves in direct and clear exposition. There is something more and better in this than literary satisfaction. For lucid speech and writing are at least considerable helps to lucid thinking; and when the leading part in philosophy comes round again to men who think and write in English, as I suspect it will ere long, Mr Balfour will deserve grateful remembrance, if it were only for this contribution to our discipline. Whatever judgment we may form of the definable results, Mr Balfour's critical work is of the kind that sets people recasting their thoughts and distinguishing between what they really think and what they have only taken over as 'current teaching,'

orthodox or unorthodox. That, at all events, is pure good for everybody who has begun to think at all.

I could wish the reader to carry this much along with him, and also to remember that in philosophy frank disagreement is the next best thing to agreement. For while I enjoy Mr Balfour's dialectic throughout, and especially where he pricks various windbags of confused thinking as little connected (under Mr Balfour's favour) with any real science as with any real philosophy, it would be saying that which is not if I were to profess agreement either with his drift in general, so far as I apprehend it, or with much of his reasoning in particular. Using the privilege of an amateur, I will begin at the end.

My first complaint is that the book has either too much of an end or too little; too much for the speculative and too little for the practical reader. Mr Balfour's arguments range over the ultimate grounds of certainty in physical science, the inadequacy of natural science as a substitute for philosophy, the claims of modern idealism to explain the universe, the dangers of trying to rationalize theology into an extension of science, and the relations of reason (or, as I should prefer to say, actively formed opinion) to authority (or rather, as I should say, passive or dependent opinion) in the practical formation of conduct and habit: and all, on Mr Balfour's own showing, for what? For the sake of establishing some kind of presumption, on a mixture of speculative and practical grounds, in favour of some such account of the relations of man to God and the world as is offered by Christian theology, and (it would seem) by that species of it which is approximately defined by the Anglican tradition of the last two centuries, and (one may guess if not distinctly infer) by that variety which commends itself to the modern school of moderate High Churchmen. It is for theologians to say whether they find much in this to be thankful for. If they do, they must expect at the hands of secular philosophers the obvious comment that within living memory they have become content to give thanks for rather small mercies. As for the plain man who wants to be confirmed in his faith, I have no doubt that a certain number of most worthy persons have derived great comfort from being told that Mr Balfour has written a brilliant book which leaves the wicked men of science and the cobweb-spinning philosophers with never a leg to stand on. And this may, for aught I know, be in its relative sphere a legitimate application of the principle of Authority. These good people will be made happy, and it will make no difference to philosophy. But will a plain Anglican layman, after really perusing Mr Balfour's discussion, think he has got much nearer to finding the tortoise that supports his particular elephant? He will learn that natural science has not found the tortoise (which no competent man of science ever pretended to do). He will also learn, if he faces the chapter of small print, that idealist philosophers have not found it either (which would be a pretty odd thing, since, unless I wholly misunderstand the aim of modern critical philosophy, it is to show that there is no

tortoise at all, nor any need to invent one). He will also learn in a delightfully written chapter, that nobody can expect to know the ultimate reasons for most of the beliefs or disbeliefs he acts on, or, to put it concretely, that a good navigating officer is not necessarily or even probably qualified to demonstrate the Lunar Theory, direct the Greenwich Observatory, and edit the *Nautical Almanack* (which is excellent common sense, but, as I humbly conceive, not relevant in a metaphysical argument). And finally it will appear to the good man that nobody can prevent him from going to church if he likes, and that he may proceed to the study of theology (Hebrew, Ante-Nicene, Roman, Anglican, Mahomedan, or the comparative study of all or some of them?) without being set down for an antediluvian bigot: which, if he be a man of sense, he might have known before.

For my part, I have long thought, herein agreeing with Mr Balfour, that when we get beyond the region of exact proof (or, to speak by the card, the region of things generally treated as admitting of it), belief is, except in the rarest cases, a matter of intellectual and moral temperament far more than of reasoning. And I know not what business one has to meddle with another man's choice of what he finds edifying, or, in Mr Balfour's phrase, tending to the satisfaction of his ethical needs: provided, of course, that he will treat one with reciprocal comity, and that his gods do not require him to kidnap one for sacrificial purposes, or perform disgusting rites in public, or otherwise run his head against other people's ethical needs as embodied in the institutions of a civilized commonwealth. No man can be compelled to philosophize; and God forbid that anyone should, for there is quite enough bad philosophy in the world without making it compulsory. We may speculate or not as we please. Nevertheless, if we do begin the game, we shall get no credit or profit in any other way than by playing it out. It is not only unfair but unsportsmanlike to fall back from the universal upon the individual point of view, and to short cuts of presumption and authority; one might as well go mountaineering with a balloon. Common sense is common sense and a necessity. Philosophy is philosophy, and a luxury. It ultimately justifies and is justified by common sense; in fact it is common sense learning to know itself. But any premature mixture of the two is a thing of naught. I cannot help thinking that in this respect a certain undercurrent of sophism runs through Mr Balfour's argument. It may be very fit for John Stiles, having such and such occupations, interests, and means of knowledge, to accept the traditions of his church or his political party more or less upon trust. For example many persons follow Mr Balfour in Irish politics without pretending to know much about Ireland, because they do know and trust Mr Balfour; and, being myself a convinced Unionist, I naturally think they do well. But this proves nothing about the intrinsic merits of the Home Rule controversy. So it is in exact or partly exact science. An unlearned Florentine living

about the year 1300 could not have gone to a better man than Dante if he wanted information about the planets. Yet most of the information he got from Dante would have been wrong. Again, as lawyers know, the owner of stolen goods may have reasonable and probable cause, upon circumstances of suspicion, for prosecuting a person who turns out to be innocent. The determination of what a man has to act upon here and now is a perfectly distinct matter from the determination of absolute truth, or the nearest approximation attainable by human faculties: and I think Mr Balfour would have done himself more justice if he had paid more attention to the distinction. He may have given the plain man some good reasons for being content to guide himself by authority; he has not given him any great assistance, that I can see, towards satisfying himself, among conflicting authorities, which is to be received and believed.

From the point of view of a speculative student I feel a little jealous of the dignity of philosophy when I see her treated as something less than a handmaid. It was an honourable post enough to be the handmaid of theology when theology was the serene mistress and sovereign of all the sciences. But Mr Balfour's philosophy is not a maid of honour nor even an indoor servant; she is rather a sort of half-grown drudge that scrubs the dirt of 'Naturalism' from the doorstep and cannot tell us what the house is like inside. Shall we dance attendance before a shut door when we can ramble with Plato, or sit by the fountain in Berkeley's garden, or fly clean over the house on Fichte's hippogriff? It seems to me that metaphysics are amply justified, for those who like them, by the intellectual delight and discipline, and that playing for the satisfaction of ethical needs, or any other stakes of supposed practical value, is apt to spoil the game. I am quite aware that many philosophers, perhaps the majority, have encumbered themselves with foregone moral purposes; but I am likewise persuaded, though I cannot here attempt to prove it, that their philosophy has almost always been the worse for it. Not that I think it unphilosophical to appeal to 'ethical needs,' in so far as they can be disengaged from the historical accidents of race, environment, and custom, and exhibited as universal. For they are at least an appreciable element of the human experience which it is the business of philosophy to explain. This appears to me (and so far, again, I am with Mr Balfour) a perfectly good objection to materialism and to every attempt to make natural science do duty for philosophy; but perhaps the chief use of the objection is that the ordinary educated reader thinks he can understand it, for materialism really gets involved in hopeless confusion and contradiction at a much more elementary stage. At what stage we can profitably appeal to ethical needs when we are taking philosophy seriously, and how much preliminary sifting our conceptions of them require, is matter for a philosopher's main work and not for an amateur's review. Mr Balfour seems, however, not to have quite appreciated the gravity of

this task. He has gone some way in specifying the ethical needs which, as he thinks, ought to be satisfied by theology or philosophy, or by both in some unspecified form of alliance. I have no wish, for many reasons, to discuss his views or suggestions in a controversial manner, and shall take a less direct, but, I think, a legitimate way with them.

A venerable and still valiant champion, Dr Martineau, has replied to Mr Balfour on this very ground[1], and Mr Balfour's conception of ethical needs not only fails to be accepted by Dr Martineau, but is positively rejected by him on certain points which, as I believe and Mr Balfour too seems to think, are reckoned fundamental in orthodox Christian theology. Mr Herbert Spencer[2] has not on the present occasion expressed himself on this head, being concerned rather to say that he seeks truth and not 'satisfaction'; but I think the whole effect of what Mr Spencer has written on Ethics gives warrant enough for saying that he would hold not only the accidents but the substance of Mr Balfour's 'ethical needs' bad for anthropomorphism. Again, I do not think any one acquainted with our modern philosophical literature will maintain that Mr Herbert Spencer's own higher ethical needs can be more easily reduced to common terms with Dr Martineau's than with Mr Balfour's. Here then are three highly educated Englishmen, representing between them a large field of both contemplative and active life, and, we may presume, agreeing for all or most practical purposes of our common social morality. But when we come to formulate the ethical needs which a complete moral philosophy may be expected to satisfy or justify, no two of them seem to agree. By going further afield we might easily multiply the divergence. At Benares, the winter before last, I visited a Brahman sage of great sanctity and most distinguished manners (and to look distinguished with no clothes to speak of does not seem easy to Europeans). He was as perfect a gentleman and had as impressive an air of refined wisdom as, let us say, Dr Martineau himself. If this learned Brahman believes in his own Vedántic school of philosophy, as I suppose he does, for he has written treatises of it in very choice Sanskrit, the daily burden of his meditation is not fame, not conscious happiness, not personal immortality, but deliverance from the illusions of individuality and finite existence. Why are not his 'ethical needs,' on the face of them, as good as ours? They are the guide of life to a vast population of all ranks, from princes to beggars, and they are embodied in a 'current teaching' more ancient and not less consistent than that of Christendom. It would seem that, whatever may be the true explanation of these differences between cultivated minds, we have not yet arrived at any such determination of the reasonable man's ethical needs as will afford a sufficient basis for the construction of any super-scientific system,

[1] *Nineteenth Century*, April, 1895.
[2] *Fortnightly Review*, June, 1895.

or an universal test for the validity of any such system if offered to us by some external authority. But perhaps the historical argument is best here. When the ethical needs of the civilized world, so far as realized in thought, have anything like the apparent clearness and certainty that Mr Balfour seems to credit his own with, the philosopher's occupation in discussing them is gone. For a corresponding system of belief is then inevitably received without question. This has happened at least once in European history, namely during the earlier Middle Ages, and it is still largely exemplified in Asia. It does not by any means follow that all existing beliefs are equally remote from the truth, or that truth is not to be found. But I submit that we are justified in feeling considerable doubt as to the promise of Mr Balfour's particular short cut. Short cuts are good in philosophy, as in mathematics and in mountaineering—when you have made sure about the other end. And there is good philosophy, at least much that belongs to a needful stage of philosophy, in certain 'New Poems' that were really new when Mr Balfour and I were young, and which (I dare say he will agree with me) are like to survive many newer poems that have been more loudly praised.

> Fools! that in man's brief term
> He cannot all things view,
> Affords no ground to affirm
> That there are gods who do!
> Nor does being weary prove that he has where to rest!

So Matthew Arnold's *Empedocles.* That is not the last word, but surely it is a word that cannot be escaped. The search for truth must be accepted for its own sake, not subject to the condition of finding a satisfaction for this or that supposed need. Else why philosophize at all, or what answer have we to the worldling when he sneers, *Cur quis non prandeat hoc est?*

Concerning Mr Balfour's assault on what he calls Naturalism, which occupies the earlier part of his book, it seems to me on the speculative side that a great deal of it is unanswerable, but that the opinions which he lumps together under that name would now hardly be maintained, collectively or separately, by anybody worth refuting, in this country at any rate. There is a certain resemblance to Butler's *Analogy* in the general construction of the argument. Butler said to the Deists of his time: 'your natural religion is itself exposed to all the rationalizing objections that you urge against revealed religion.' Mr Balfour says to the 'Naturalist': 'Dispose of the difficulties that surround the fundamental ideas of science before you set up those ideas as an insuperable bar to the acceptance of a supernatural revelation.' Both arguments are quite fair and philosophical. Butler's, I think, is now generally though not universally allowed to have been successful as against the school he attacked. In each case the whole field of historical criticism and 'evidences' is left open, and remains to be waked before any definite

conclusion can be reached. Only Mr Balfour's 'Naturalist' is not, to my mind, anything like as substantial a foe as Butler's Deist. On the practical side I cannot help thinking that Mr Balfour estimates above their true rate both the vitality of what he calls 'current teaching,' that is, the average orthodoxy of the pulpit and the Sunday-school, as a factor actually determining people's habitual conduct as men and citizens, and the extent and intensity of any active repugnance to it. Naturalism, if it means anything definite, means holding that the natural sciences are an adequate substitute for philosophy. The leaders of science and scientific exposition have not held or taught any such thing, Helmholtz no more than Leibnitz or Newton, Tyndall no more than Clerk Maxwell or Faraday, Darwin no more than Owen. I wonder, by the way, how many people in this country know that Tyndall's much misunderstood Belfast address was received as a serious and welcome contribution to the philosophy of science by Riehl, one of the chief recent expounders of Kantian philosophy in Germany, while theological dabblers in metaphysics were abusing it at random in England? A lesser man than Mr Balfour might amuse himself, for anything one cared, with setting up a philosophico-theological Aunt Sally to throw at. Mr Balfour throws his sticks very prettily, but it is not modern warfare, and one would like to see him doing something better.

I do not doubt that there is a real movement in public opinion which is present to Mr Balfour's mind when he describes the supposed ravages of Naturalism: only it strikes me in a different way. Liberal education has gradually come to include some knowledge of the history of science, of the formation of method, and of the progress of discovery. From history, likewise, we learn the rise and fall of religions and philosophies; and as to the latter at any rate Mr Balfour will admit that we do not hear of any of them being thoroughly successful; for Mr Balfour seems almost to take a malicious pleasure in exaggerating the failures of all philosophical schools both ancient and modern. Thus the plain man is put upon observing that those whose business brings them in contact with the sensible nature of things, mariners for example, agree in knowing what they want, and that the methods and discipline of science, in this case represented by the Astronomer Royal and his staff, provide for their wants with universal approval by publishing the *Nautical Almanack*, which has helped many a good ship safely out and home. Whereas, when he observes the expressed needs of mankind in the region of things unseen, he perceives that even educated men living in the same society do not agree in knowing what they want, and that theologians, instead of producing a single accepted *Nautical Almanack*, have produced a great variety of conflicting systems, formulas, and usages; and that, for the most part, not as provisional or alternative aspects of truths inexpressible in human speech, but each creed as containing the only true and admissible explanation of God and man and the world. He will recognize that several if not all of the conflicting Churches and persuasions have plenty of

arguments to prove their exclusive and paramount claims to spiritual allegiance. But this (unless and until he has examined some such argument in detail and found it convincing) will not dispose him to think better of them. He may therefore perhaps conclude, notwithstanding all Mr Balfour's dialectic, that on the whole the men of science have so far shown that they know their business better than the theologians. And, while he may or may not think proper to remain in practical conformity to the Church he was brought up in (this being a matter of private judgment and conscience not reducible to general rule), he may become rather indifferent to theological or theologico-political controversies which do not seem to point to something like a new method in religious speculation, or to hold out some promise of establishing foundations not much less firm than those of the natural sciences. I am not stating this as a philosophical position; on the contrary, I wish to point out that it does not involve the acceptance of any philosophical proposition, sound or unsound, and is consistent with a genuine absence of prejudice against any particular system. On Mr Balfour's own view of the relations of reason to authority, I cannot see that it is a perverse position for a fairly intelligent man to take, or that it entails any tendency to moral obliquity or to a general collapse of social morality. That it cannot be a permanent position, though it may have to last another generation or more, I quite agree. Moreover it has its dangers, such as that of being beguiled by cheap and flimsy sham philosophies of spiritual worlds or social evolution, masquerading in the clothes of science. But on this we need not dwell.

The popular form of Mr Balfour's discussion, combined with the total absence of an analytical table or index (a defect against which a lawyer is always bound to protest) makes it hard to say what Mr Balfour's own philosophical position really is. If I may repeat what I formerly said (in an unsigned review) about his 'Defence of Philosophic Doubt,' it seems to be in a certain sense ultra-Kantian. For Mr Balfour, if I rightly follow him, holds not only that Speculative Reason is not competent in the field of Practical Reason, but that it is not competent even to support itself. It is not my business to take up a challenge which Prof. Wallace, an honoured colleague of mine, though in another Faculty, has deliberately left alone[1]. But I cannot help suspecting that the idealism rejected by Mr Balfour, apparently with some regret, is as unsubstantial an adversary as his naturalism. In our undergraduate days it was a small and harmless practical joke to go into a man's rooms when they were left open and make a kind of scarecrow or eidolon with his boating flannels or any other garments one could find lying about: if you could fashion them into some caricature likeness of the owner, so much the better. Has not Mr Balfour been making an eidolon in the Master of Balliol's study? I read, in the chapter which the general reader is warned off, that idealism drives each of us to 'the

[1] *Fortnightly Review*, April, 1895.

conclusion that in the infinite variety of the universe there is room for but one knowing subject, and that this subject is himself.' It is a long time since I have looked at the *Kritik der reinen Vernunft*, but I did suppose that Kant, in demolishing the 'empirical Ego[1],' had once for all exorcised the phantom of 'solipsism' that scares Mr Balfour. A *solus ipse* is just as abstract and artificial, just as unthinkable in any sound philosophical criticism, as a *solus mundus* or Ferrier's 'matter *per se*.'

Finally, I venture to express the hope that we have not seen the last of Mr Balfour's work in this kind. After some reasonable time, which as an amateur of philosophy I should like to put within ten years hence, but as a citizen (for divers good causes not of philosophical interest) to postpone for not less than six or seven, he will perhaps consider whether the materials of this book and of the 'Defence of Philosophic Doubt' may not, by relegation of transitory and merely controversial matter to the background, and with something more of a free hand in construction and of just confidence in the positive as well as the negative powers of dialectic, be recast as an intellectual possession more valuable and more lasting than either of them as it now stands.

FREDERICK POLLOCK.

---

*Natural Rights; a criticism of some political and ethical conceptions.* By DAVID G. RITCHIE, M.A., Professor of Logic and Metaphysics in the University of St Andrews. London: Swan Sonnenschein & Co., 1895. Pp. 300.

PROFESSOR RITCHIE'S book consists of two parts. The first part deals with "The Theory of Natural Rights"; this is treated first historically in chapters on "The Principles of '89," "The History of the idea of Nature in Law and Politics" and "Rousseau and Rousseauism"; then, after a discussion of the terms "nature," "natural," the general question "What determines Rights" is raised and answered in the concluding chapter of this Part. The second and longer part consists of a discussion of "Particular Natural Rights"; in which the conceptions of "Right to Life," "Right of Liberty," "Toleration," "Right of Public Meeting," "Freedom of Contract," "Resistance to Oppression," "Equality," "Property," &c., are criticized in a somewhat discursive style; the criticisms being intermingled with a certain amount of positive suggestion, and relieved by occasional excursions into history.

The author claims to have approached the subject in a spirit "more appreciative and sympathetic than was possible to Burke or Bentham"; but the appreciation and sympathy appear to be confined to the theory in its historical aspect; his treatment

[1] Whether Hume had not done it already is a historical question which I mention only to show that I do not ignore its existence.

of the doctrine of Natural Rights, as an element of present thought, is throughout critical and polemical.

The book is designed to interest the "general reader," as well as the "special student of ethics and politics." Mr Ritchie has, I think, been more successful in the former of these two aims than in the latter. He is in many respects well qualified for instructing without fatiguing the "general reader": he has read widely, his style is clear and lively, and he writes without any political *parti pris*. Even an untrained reader who has any interest in the subject will find no difficulty in perusing his book, and will find himself thereby agreeably stimulated to impartial reflection on political topics, delivered from any prejudices that he may have vaguely entertained in favour of "Natural Rights," and in possession of various pieces of interesting historical information.

To the student, I think, the work cannot be recommended without considerable reserves. In the serious study of ethics and politics, system and method are of fundamental importance: and on this side Mr Ritchie's book is certainly defective. This is perhaps due to the want of affinity between his own philosophy and the intellectual habits and tastes of the general reader at whom, as we saw, he is partly aiming. He is himself an adherent of the Transcendentalist doctrine that human beings have rights and claims only as partaking, actually or potentially, of the one Universal Reason. But he is aware that the general reader is likely to regard this as "unintelligible mysticism"; so after briefly indicating his creed (pp. 96, 7) he passes to an "easier way of putting the case." That is, he is content to operate with the current conceptions of "social organism," "social welfare," "social order and coherence"; without making any serious attempt to grapple with the difficulties and ambiguities which these notions involve. In one passage indeed (p. 113) he does offer a new "definition of Progress in the only sense in which Progress can be an end of action"; he defines it as "such increasing complexity of structure as is compatible not only with increasing integration but with increasing or at least undiminished adaptation to environment." But I cannot see that he makes any attempt to apply this conception methodically in the rambling discussion of particular rights which occupies the greater part of the book.

It must be said that Mr Ritchie seems to be aware of the unsystematic character of his work, so far at least as its positive element is concerned. In his concluding remarks he does not claim more than that "any one who chose could pick out of the foregoing pages considerable fragments of a constructive creed." Perhaps he could; but I think he would find it harder to put them together into a coherent whole than Mr Ritchie supposes; and it is hardly a merit in a book designed for students that it gives occasion for the exercise of intellectual ingenuity in the way above indicated. Mr Ritchie would reply that his primary aim is critical, not constructive, "to expose confusions, to set those people thinking who can be

induced to think." And I do not deny that his book may be useful in this way: but even criticism, in a book designed for students, should be somewhat more methodical and careful than Mr Ritchie's. This is all the more the case, because there is really only one writer whose work it is important that he should criticize, so far as the theory of Natural Rights is treated as an element of current thought. Were it not for the existence of Mr Herbert Spencer, the proper treatment, for students, of the theory of Natural Rights would be a simply historical treatment: what keeps the philosophical controversy still alive is mainly the fact that the most eminent and influential of living English philosophers has recently published—under the title of "Justice"—an elaborate defence of the theory. This being so, I find Mr Ritchie's polemical references to Mr Spencer surprisingly casual and superficial. He remarks, in his airy way, that "Mr Herbert Spencer, in sad isolation defends 'natural rights' against the logical consequences of the evolutionist philosophy with which he has familiarised his contemporaries"; and he informs the belated thinker that "the conception of society as essentially organic or superorganic, if it be once really accepted, is incompatible with the individualism of the 'natural rights' theory." I am not concerned to controvert this; but since Mr Spencer has fully stated his reasons for thinking otherwise, the student might fairly look for some adequate account of these reasons and some adequate attempt to answer them, in a criticism of Natural Rights that runs to 286 pages octavo: and he certainly will not find either in Mr Ritchie's volume.

The historical element of Mr Ritchie's work seems to me more instructive than the quasi-philosophical. On historical points to which he has given due attention he writes with penetration and independence of judgment, and usefully corrects some widespread errors. But he is not adequately conscious of the limitations of his knowledge: hence, on matters to which he has not given special attention, he is liable to fall into grave inaccuracies. I will give two examples of this, selecting them so as to illustrate at the same time the real merit of his historical work. (1) In his first chapter, on the "principles of '89," he exposes briefly and effectively the mistake of regarding the creed of "liberty and equality" as distinctively French. He quotes from the Bill of Rights of the State of Virginia, composed in 1776, the doctrines commonly attributed to "French metaphysics": and he traces their source back to Locke's fundamental proposition that "men being by nature all free, equal and independent, no one can be put out of his estate and subjected to the political power of another without his consent." All this is true and useful: but Mr Ritchie goes on to say

> "The theory of natural rights is simply the logical outgrowth of the Protestant revolt against the authority of tradition, the logical outgrowth of the Protestant appeal to private judgment, i.e. to the reason and conscience of the individual."

I cannot help suspecting that Mr Ritchie arrived at this

conclusion *a priori*, by first convincing himself that the derivation of the theory of natural rights from Protestantism was logical, and then inferring that it actually occurred. But this is a dangerous mode of applying the principle of the "Rationality of History." I rather wonder that the opening sentences of Filmer's *Patriarcha*—which he appears to have read—did not lead Mr Ritchie to pause before committing himself to the sweeping statement above quoted. "Since the time," says Sir Robert, "that school divinity began to flourish there has been a common opinion maintained, as well by divines as by divers other learned men, which affirms—

'Mankind is naturally endowed and born with freedom from all subjection, and at liberty to choose what form of government it please, and that the power which any one man hath over others was at first bestowed according to the discretion of the multitude.'

This tenet was first hatched in the schools, and hath been fostered by all succeeding Papists for good divinity. The divines, also, of the Reformed Churches have entertained it." Now I do not quote Filmer as a reliable authority on the history of mediæval opinion: no doubt his statements are loose and inaccurate. But they are decidedly nearer the truth than Mr Ritchie's. The doctrine that the legitimate authority of Government is normally derived from the free choice of the governed is found in mediæval thought long before the Reformation: and though it was certainly impelled into a fresh phase of development by the controversies to which the Reformation gave rise, it appears in Catholic no less than in Protestant writers of this later period.

(2) In his chapter on "Rousseau and Rousseauism" Mr Ritchie affirms that Rousseau's "views about the sovereignty of the people are identical with those of Locke." Now doubtless both Locke and Rousseau attribute, in a certain sense, sovereignty or supreme power to the people: but the difference between their respective views of this power and its conditions seems to me of great importance. Indeed one of the most interesting threads in the development of modern political thought is constituted by the series of gradual changes through which the doctrine of 'governmental authority derived from the consent of the governed' passes: and the change from Locke to Rousseau is as well marked as the change from Grotius to Locke. In Rousseau's view the supreme legislative power belongs essentially and permanently to the people, the community as a whole: and this power is unlimited, except by the condition that the 'general will' of the sovereign people can only be properly expressed in general laws. The application of these laws to particular cases, the current administration of the affairs of the community, must be handed over to what we ordinarily call the government: but the function of this government is purely executive: supreme legislative power belongs inalienably to the whole people and cannot rightly be transferred to any other body or individual. In Locke's view, on the other hand, the people *had*

originally supreme legislative power, and might have retained it and constituted the form of government a perfect democracy: but they might also put the power of making laws into the hands of "a few select men and their heirs" or of "one man and his heirs," thus constituting oligarchy or monarchy—or any "compounded and mixed form of government." Suppose hereditary monarchy thus established, supreme legislative power—in Locke's view—remains with the monarch and his heirs, so long as the family lasts and the successive monarchs are faithful to the trust reposed in them. When the family becomes extinct, the supreme power reverts to the people again: otherwise it is only when an established government manifestly neglects or opposes the ends for which power is entrusted to it, that the people can rightfully withdraw this power. Hence, though in Locke's view there always "remains in the people a supreme power to remove or alter the legislative, when they find the legislative act contrary to the trust reposed in them," this power is merely latent so long as the established government is faithful to its trust: "the community may be said in this respect to be always the supreme power, *but not as considered under any form of government, because this power of the people can never take place till the government be dissolved.*"

The theoretical difference between the two views is surely unmistakable. I ought, however, to add that Mr Ritchie's account of Rousseau's doctrines, so far as he feels called upon to deal with them, is in the main very good: and effectively guards against the mistake—into which more than one eminent writer[1] has fallen—of supposing that Rousseau's political ideal was designed to restore as nearly as possible the primitive "state of nature."

H. Sidgwick.

---

*Logic.* By Dr Cristoph Sigwart, Professor of Philosophy at the University of Tubingen. Second edition, revised and enlarged. Translated by Helen Dendy. London: Swan Sonnenschein and Co. 1895. 2 vols. pp. xii., 391, viii., 584.

Sigwart's *Logic* should be welcome to English readers, both for its own merits, and because, as the author points out, it is not entirely foreign to us. As first issued in 1873 and 1878 (vol. 2) it owed much to Mill and Jevons, and in the interval before the second

[1] See, for instance, Maine's *Ancient Law*, pp. 88, 9. "Rousseau's belief was that a perfect social order could be evolved from the unassisted consideration of the natural state.....Every transformation of society which would give it a closer resemblance to the world over which the creature of Nature reigned is admirable." Whereas in the *Contrat Social* (I. ch. viii.) Rousseau had expressly said that the "passage de l'état de nature à l'état civil produit dans l'homme un changement très-remarquable, en substituant dans sa conduite la justice à l'instinct, et donnant à ses actions une moralité qui leur manquait auparavant."

edition appeared it has been adjusted with reference to the work of Mr Bradley and Dr Venn. It is, indeed, from those in England who care most for the earlier German work that the writings of Dr Sigwart's generation have to expect the most critical reception. So the whirligig of Time brings about his revenges. Some of us, however, are too grateful to Dr Sigwart for what we have learned from him, to lay a needless emphasis on philosophical rather than purely logical differences.

The outline of this standard treatise on Logic is surely too well known to need restatement. For the sake of English readers, for whom this translation is intended, it may however be mentioned that the work falls into three parts, of which the third, the Methodology, occupies the whole immense second volume[1], being in its English form near 200 pages longer than the two first parts put together. The author is here, I think, seen at his very best. The real account of Induction as a genuine element in science is for example to be found here and not in the description of Inference in vol. 1. We feel ourselves in the presence of a writer who has a true enthusiasm for method, and we learn, I think, at every step. The second part of the work, called "Normative," deals with the theory of Inference; that is to say, the conditions of Inference and of stable conceptions are treated as the normal laws for the formation of perfect judgments. The first or analytical part deals as its name implies with the analysis of actual judgment, and here again we may observe the peculiar strength which Dr Sigwart displays in the systematic and comprehensive review of fact. In two regions, the study of the judgment, and the account of Induction with its auxiliary methods, he has always appeared to me to be indisputably successful, and therefore also in the treatment of Enumeration, which is closely akin to both. The term Numeration indeed, by which "*Zählung*" is rendered in the section on statistic, disguises the essential relation to a whole of a certain kind which the more usual term "Enumeration" expresses, and for the same reason, loses contact with "Induction by simple Enumeration." Probably this rendering was adopted, in consultation with the author, in order to insist on the aspect of counting as, so to speak, putting numbers upon things. On double negation Dr Sigwart refers to Mr Bradley, and has considerably modified his statement in accordance, apparently, with Mr Bradley's criticism. The view that the double negation 'die ursprünglich aufgestellte Bejahung in Kraft setzen muss,' has made way for a view which presupposes not necessarily a completed affirmation, but only an "attempted" one, as that against which negation must be directed. The phrase "an attempted affirmation" occurred in edition 1 (p. 120) in describing ordinary negation, but was not repeated in the account of double negation (p. 156), in which it has now been introduced. The doctrine

[1] See Miss Dendy's article, *Mind*, N.S. III. 270, for the additions in edition 2 of this volume.

involved, that of the secondary or subjective character of negation, reappears in Dr Sigwart's view of the fundamental difference between negative and positive conclusions in induction, which however displays its peculiarity in a somewhat strong light. The conception that negation must always have a positive ground, with which Dr Sigwart now appears inclined to reconcile his theory of double negation, does not bear out the distinctly secondary character which he ascribes to the negative as a judgment on a judgment, but rather points to a possibility of coordination between negative and affirmative. The force of the negative form *per se* is no doubt, as Dr Sigwart says, to destroy the possibility of an affirmative. But this force does not amount to a judgment which can be made; and with a positive ground or bearing, which is necessary to judgment, the negative at once begins to assimilate itself to the affirmative.

In the treatment of the subordination of concepts we recognise the same free and positive handling as in Lotze and Bradley, the latter of whom perhaps owes something to Dr Sigwart on this point. "The necessity of any fixed order, and hence this imaginary pyramid of concepts, can be grounded only upon the metaphysical view which regards the higher concept as the real cause of producing the lower" (Sigwart, I. p. 273, Transl.).

In the preface to the first edition of the second volume (1878) Dr Sigwart announced his fundamental agreement with Jevons on the nature of Induction. Induction, for him, is a form of Reduction, proceeding on the general postulate that the given is necessary, and seeking, upon the ground of the syllogistic rules, the premises in consequence of which the particular facts of observation present themselves. Induction is thus regarded as Inverse Deduction. And it may be said at once that all effective analysis of method in recent logic proceeds on this or on some closely kindred conception of the unity of knowledge, and rejects, with Dr Sigwart, the attempted empiricism of Mill, while developing the more fruitful elements in his theory.

Yet here, in the heart of this very valuable analysis successfully applied, we meet with a paradoxical doctrine which gives a clue to the one main set of difficulties presented to the philosophical student by Dr Sigwart's views, on the side where they touch philosophy in general. The hypotheses discovered by inductive reduction may be refuted, we are told, but cannot be proved. They can at most be rendered probable. Only negative conclusions can be necessary in Induction. This is a dispiriting idea, for it amounts to saying that we can be sure of failure but not of success. And if we follow it up, we see that it is inconsistent with the organic conception of knowledge which the author himself has well stated on p. 324, vol. 1. If the certainty of knowledge rests on its approximation to forming a whole, then it cannot be true that its growing organisation brings with it no necessity. The error, as it seems to me, arises from the remnant of mechanical ideas which the author's central theory has

not outgrown. If the hypothesis were one unalterable solid, and the observed elements another, then a single point at which they did not fit each other—a single negation—would prove that with these facts this hypothesis is incompatible. As we can never be secure against a partial misfit arising between the best known phenomena and their explanation up to date, it would follow that we have by induction—that is, by ordered experience—no necessary knowledge. But the true state of the case is easily seen. Induction does not leave the observations standing untouched; it modifies, illuminates, and connects them. In different degrees the hypotheses enter into and become unified with them. A negative can only strike away something that is isolated and superfluous; it cannot undo the labour which thought has mixed with the data. Its apparent necessity arises from that very limitation which prevents it from affecting the whole unified experience. In proportion as by loose interpretation, on the other hand, it is referred to the whole mass of unified experience, the negation loses the spurious necessity conferred by its minuteness, and presents the same extended surface to attack which was the ground for ascribing necessity to the organic experience itself. For example, after a lifelong study of a book and its period I say, "These characteristics compel me to suppose, for such a reason, that the book was written in such a year." Direct evidence is subsequently discovered that it was written in another year. How much is proved against my hypothesis? The newspapers will say that it is annihilated, but for historical science all that was important in it may be established by the discovery. The reason which pointed to one year may be better fulfilled by another. I was wrong, no doubt, in the year, but may have been right, and original, in the essential content of my hypothesis. The question is one, not of the relation between positive and negative, but of the relation between a department of organised experience and any single detail, whether positive or negative, affecting it. The larger organisation has always the more necessity, and though every single datum, whether positive or negative in form, proves something and is so far necessary, it is impossible to say beforehand how much it may prove.

Now this mechanical separation of data and hypothesis indicates an attitude to the theory of Identity and to the ultimate account of Inference and of necessary truth which is characteristic of the author. Everywhere I seem to trace a defective sense of unity; a neglect, for example, of the actual modification undergone by judgments in Inference appears in the criticism of Mr Bradley's theory, pp. 335–6, vol. 1. The account of the syllogism seems directed rather to show in what form an inferential connection must be stated, than to what character of thought it is owing that a connection is possible. Over against the excellent theory of necessity to which I have referred, the ghost of immediate necessity and the ultimate axiom seems to walk throughout the earlier part of the work, and an abstract idea of Freedom seems even

to mar the account of possibility, and the ideal of complete experience.

It is important to insist, however, that for the student a defect on the side of unity is tolerable and even wholesome. He is pressing towards unification, and the danger is that he should reach it too soon. Dr Sigwart, however one may differ from him, is a master of his business, and if the student finds difficulties in him, he may rest assured that his unification will not be worth much until he has battled through them.

The translation calls for special notice. It is not much less in magnitude than the Clarendon Press translation of Lotze's *Logic and Metaphysic*, the labour of which was divided among eight Oxford men. The best evidence of its quality is that in using it one is wholly free from the unpleasant doubt what the author can possibly have meant to say, which in ordinary translations drives one perpetually to refer to the original. It reads easily, and like the work of an expert in the subject. The translator must be congratulated on having rendered a work of permanent value effectively accessible to English readers.

B. Bosanquet.

---

*Our Notions of Number and Space.* By Herbert Nichols, Ph.D., late Instructor in Psychology, Harvard University. Boston, U.S.A.: Ginn & Company. 1894. Pp. vi., 201.

This volume contains the results of an extended investigation regarding the discriminative sensibility of different regions of the skin and the variations in the accuracy of our estimation of spatial relations due to different modes of stimulation. It has for its purpose however not merely the description of methods and results, but also the presentation of an experimental proof of the genetic theory of space perception. The experiments were not devised for the purpose of proving the theory: they were carried out independently with the view of determining whether "our habits of judgment"...betray permanent characteristics running parallel with the local differences of anatomy, of function, and of experience, which give rise to them, and in which they are rooted. The theoretical explanation which is adopted presents itself, according to the author, as the most natural interpretation of the facts which unexpectedly revealed themselves in the course of the research. This was the order of investigation; it is at the same time the order in which the subject is presented in the volume before us and we may as well follow it in giving an outline of the research.

In the first group of experiments rows of pins, arranged in a straight line like the teeth of a comb, were applied to the skin. The pins varied in the different experiments not merely in their number, but in their distance from each other. After each application the

subject was required to give a judgment both of the number of pins and of the total length of the row. The regions investigated were the tongue, forehead, forearm, and abdomen. In some of the experiments the subject was allowed to rock the line of pins, back and forwards on the skin; in others the impression was made simultaneous by pressing evenly. Experiments were also made in which the subject gave his attention solely to the number of points sensed, and in which the pins were replaced by the straight line formed by the edge of a piece of cardboard: in the latter case the number of points, as the author remarks, was "increased to a maximum, or to infinity."

In the second group pins arranged in triangles and squares were employed. The same regions were stimulated and in other respects the methods of experimentation resembled those of the first group. In addition to judgments of number and of distance the subject had to give an estimation of the figure of the pins applied to the skin. In the third group the triangles and squares were made by edges of cardboard: in the fourth "solid figures," triangles, squares and circles made out of cork, were employed in the experiments.

In the next group of experiments the object was to determine the part played in our judgments of space by such factors as mass, intensity and time rate of stimulation. The apparatus was a pencil of ivory which was drawn over the skin, the degree of pressure and rate of movement being varied. The judgments of horizontal and vertical distances were next compared, various regions of skin being stimulated with lines of different lengths. One of the most interesting parts in the whole research consisted in the modification by suggestion of judgments regarding the number of pins applied to the skin: the result of these experiments, as was mentioned in a short notice in the January number of *Mind*, was to shew that by skilful suggestion the reagent could be brought to believe that two pins were applied to the skin when really there was only one, the distances of the supposed pins in the different regions bearing a general relation to the limina for distance demonstrated by Weber.

In discussing the experiments of the first group Dr Nichols brings forward three 'laws' which govern the results. The first he calls a law of chance: it means simply that since the subject knew beforehand what were the limits in the number of pins and in the distances which were employed in the experiments, he could not give judgments involving magnitudes lying outside of these limits and inevitably tended to underestimate magnitudes lying at the upper limits. According to the second law "the longer the distance, the more accurate the judgments." Two statements are given of the third law; one apparently makes it equivalent to the second: "with decreasing distance we have a tendency to spread the increasing uncertainty more and more over the wider field of possible judgments." The other statement gives to the law an empirical expression "the lower the numerical category the stronger is the tendency of the uncertain judgments to drift towards overestimation." Later

on the author suggests the possibility that this "drift" may be a matter of mathematical or psychological chance and declares himself unable to decide the matter. It seems plain that if this suggestion be accepted we have simply a restatement of part of the facts embodied in the first 'law of chance.'

It is in the facts embodied in laws two and three that Dr Nichols finds proof of his theory that our perceptions of number and of space are derived from experience of successive stimulation. In agreement with Prof. James he insists that apart from successive experience no discrimination could take place; our perception of duality and manifoldness is due, he holds, to "the average run of experience" to which the area of skin whose sensibility we are determining has been subjected. In areas so small that on the average we have only simultaneous stimulation we do not perceive duality, but where we have had successive stimulation there we may have differentiation and manifoldness: the larger the area the more likely is it that the experience will be successive. Here then we see the meaning of the second law: judgments become more accurate with increasing distance because we have therewith increasing education in discriminating. Law three would serve for proof also if we were to look upon it, as the author inclines to do, as the "expression of a loose and inexact general habit of the whole brain, or of a large sphere of it, to act most strongly in the direction of the general average of the entire range of experiences embraced in that general habit." Detailed evidence is found in the results of the first experiments where the pins were pressed evenly twice only, and where attention was limited to the number of points sensed. In both cases the accuracy of perception was diminished, in the first case we are told because the serial or successive factor was eliminated, in the second because memory or the reference to past average experience was not permitted to act. In discussing the distance judgments gained by stimulation of the skin the same principles are employed. Just as simultaneous stimulation without previous succession will not arouse any plural category whatever, so it will arouse no conception of distance whatever. Stimulation of any particular distance on the skin brings forward a distance category based on the dominant and average habit which is the resultant of experiences which have most frequently combined that particular collection of nerve ends. A new, fourth, law according to which the greater the number of pins the more accurate should be the distance judgment, is accounted for on the hypothesis that in proportion as the number of pins is increased the appropriate judgment will be more certainly and accurately called up.

We have not space here to give a detailed statement of the discussion regarding the succeeding groups of experiments; by ingenious reasoning the author claims to shew that the same laws are operative and that the same general conclusions follow. It was found in the experiments with a moving pencil that quick light strokes seemed shortest and slow heavy strokes longest. Explanations of the first fact,

such as that we associate short time with short distance, are neglected as clumsy and dogmatic: the mental state resulting from the stimulation has a native specific character due, not to a combination of other ideas, but to the central union of two independent factors, the peripheral stimulation, which is serial, and the central tendencies which it arouses and which represent the average of already attained experience, being also in essence serial. The explanation of the suggestion experiments is found also in a combination of central and peripheral factors. Through experience the stimulation of a certain extent of skin is associated with duality. The sensation caused by a single pin has not ordinarily the character which will call forth this consciousness, but by sufficiently strong expectation the central tendency to duality can be given such strength that it will unite with a peripheral stimulation which otherwise would have given an impression of singleness.

As can be seen from this sketch the investigation is comprehensive, original, and ingeniously carried out. There is much that is suggestive both in the experiments and in the hypotheses brought forward in interpretation. But at the same time the book is marred by several somewhat serious defects. It is badly written. In various passages the meaning is obscure. Part of this is due no doubt to the brevity with which Dr Nichols has chosen to treat many of his points, and to the fact that throughout the book he has presented almost solely his own theories and has not taken pains to shew their relation to other discussions. One can understand the reason which Dr Nichols gives for not printing his tables in full; still in justice to himself and for the sake of future work in this subject it is to be regretted that he has not found his way to giving more details of the very large number of experiments which were made. Most of the experiments were made on four subjects and the figures given in the tables are the averages of the results of these four persons, each individual average being again the average from 100 experiments. From an inspection of the tables which Dr Nichols kindly furnished me, I am able to say that the total averages of correct judgments do give a very fair representation of the course of the individual results: the mean variation in each case from this average Dr Nichols states to have been small.

It is unnecessary to discuss here the main theses,—differentiation through succession and the genesis of spatial out of serial experience. The only question to be asked is whether Dr Nichols has contributed anything essentially new to their proof. I cannot see that he has been able to give any adequate account on his theory of the specific element of extension in the space consciousness. And the assertion that simultaneous experience can not give difference seems liable to the charge that it transforms a description of the way in which much of the detail in our experience as, *e.g.*, in these experiments, becomes evident, into a condition of having any detail in the experience. It is true that in the growth of knowledge differences are successively forced on us. But if differences, no matter how attained, can

ultimately be combined in one simultaneous state of consciousness, why may we not suppose differences equally pronounced, due to differences in the psychophysical organism, to be given in the first simultaneous experience?

W. G. Smith.

---

*Philosophy of Mind: an Essay in the Metaphysics of Psychology.* By George Trumbull Ladd, Professor of Philosophy in Yale University. New York: Charles Scribner's Sons, 1895. Pp. xiv., 414.

The main purpose of his *Psychology*, as Professor Ladd tells us, was to give the descriptive history of mind-life in the individual man, in the light of development, together with such explanations as modern science seems to afford. The present work is an essay in the speculative treatment of certain problems, suggested but not usually discussed in the course of an empirical study of mental phenomena. It therefore stands midway between scientific psychology and general metaphysics. It is more than the former, because such questions as those of the relation of psychology to philosophy, of the nature of the mind, or of the connection between mind and body are inextricably mingled with comprehensive problems in philosophy: it is less than the latter, because these questions, which arise more immediately at the conclusion of empirical psychology, are simply a select part of all the metaphysical problems which its study must ultimately suggest, and are not themselves carried to their ultimate metaphysical conclusion.

The first two chapters treat of 'Psychology and the Philosophy of Mind.' It is generally considered that the experiments and statistics of the new psychology constitute a sufficient answer to the Kantian objections to psychology as a science. But the practice of the advocates of a scientific psychology which shall keep itself clear of all metaphysical implications does not accord with their preaching. Sometimes there is posited an entity called the 'brain'; sometimes a favourite metaphysic is admitted by the back-door. The natural sciences are permeated with metaphysics; but they are frank and courageous, if totally uncritical, while psychology is vacillating. The reasons are partly historical,—the new psychology is too often ignorant of philosophy; partly environmental,—the student inclines to underestimate introspection as compared with the 'exact' methods of natural science.

Two courses are open for the treatment of psychology as related to metaphysics. We may assume a common-sense metaphysic, and keep to it: or, if we wish to be thorough, deliberately assume a metaphysical standpoint and make it helpful in explanations of mental phenomena. Thus Volkmann is dualistic, Wundt monistic ('ideal-realism'): and both are more successful, *e.g.*, than James,

Hoeffding or Flournoy. Professor Ladd's position may be given in his own words. (1) The final aim of *psychology* "is to understand the nature and development, in its relation to other beings, of that unique kind of being which we call the Soul or Mind." (2) *Philosophy* "seeks a unitary conception of the real world that shall be freed, as far as possible, from internal contradictions and based upon all the facts of nature and of human life." And as to the relation between them, (3) "the psychological problems started by the common experience of perception and of self-consciousness inevitably serve as propaedeutic to the philosophy" of nature and of mind. Every principal problem leads up to many philosophical problems.

The *differentia* of this position is clearly brought out in the second chapter ("The Concept of Mind"). The book is to deal, for the most part, with "problems started by the psychology of that form of human experience which is called the consciousness of Self." Here the content-psychology is inadequate. The 'state' is not merely passive content: it must be regarded "on the side of active discriminating consciousness." But the alternative is not the envisagement of mind as a pure and changeless Being. The one all-important mental phenomenon which must shape our concept is the phenomenon of knowledge, and especially of self-knowledge. "The state or activity of mental life from which" the concept of mind "is derived, and to which it returns (as it were) with ever richer contributions of content to the same state or activity is called self-consciousness. In every act of self-consciousness some definitely discernible content of sensation, of imagining, of thinking and of feeling is to be found." But there is more than this: "in all actual concrete cases of self-consciousness I am active, and am conscious of being active."

The following chapters discuss "the implications of that concept of mind whose nature, genesis and development, as a series of psychic facts, psychology presents and explains," from the author's theoretical standpoint. Chap. iv. takes up the question of the reality of mind. This presupposes a metaphysics and epistemology. And metaphysics lays it down that "every real being is known as a self-active subject of states, standing in manifold relations to other beings, and maintaining its right to be called real by acting and being acted upon,—only, however, in obedience to certain laws." Every assumption and subordinate conception which metaphysics finds by its analysis to be necessary to all reality, belongs "most obviously and incontestably to that particular real being which is called the mind." In particular, "the peculiar...reality which belongs to Mind is its being for itself, by actual functioning of self-consciousness, of recognitive memory and of thought." This conclusion is based upon a detailed analysis of the propositions 'I am,' 'I was,' 'I have been.'

In the succeeding chapter ("The Consciousness of Identity and so-called Double Consciousness") the writer's personal views again

find characteristic expression. The real identity of anything consists in the fact that "its self-activity manifests itself, in all its different relations to other things, as conforming to an immanent idea." Changes rather heighten than diminish the consciousness of identity, properly understood: they test the power of self-identification. No form of consciousness furnishes the knowledge, "either immediate or inferential, of an unchanging core of existence as belonging to the so-called Self." But "to be self-conscious and to remember recognitively is to be conscious of being identical and self-same."—The identity of mind is contrasted at length with the identity of things; and the chapter ends with a very interesting section on the phenomena of 'double consciousness,' unfortunately too long (24 pp.) for summary. Professor Ladd's views are not modified by these phenomena.

The unity of mind (chap. vi.) has already been defined by implication. "To establish that unique claim to a unitary being which runs through and binds together all the different 'moments' of mental life, it is necessary to know one's self as the self-conscious, remembering, thinking and planning subject of a continuous course of mental development." Three quasi-practical remarks follow as corollaries. (1) The reality of the mind is not to be spoken of as though it were a sort of fixed *quantum*; (2) unity, too, is no rigid and fixed qualification that can be assigned to all individuals alike; and (3) if there be any immortality of mind, it is the continuance of a self-conscious and recognitively known life-development.

The next two chapters are devoted to the problem of 'mind and body.' Current theories too often confuse the discussion,—either by missing the right relations of psychology and metaphysics (cf. chs. i. and ii.), or by making wrong application of the principle of causation. The only psychologically defensible view of the latter is as follows. (1) The notions of cause and effect chiefly originate in the relations between body and mind, as actually experienced. (2) This conception of causation is complex: involving the conception of self-activity, the supplementary conception of suffering some change, and the conception of a relation of dependence. (3) It is metaphysical from the outset. (4) It is applied to "the concomitant or successive changes which go on in other things through a secondary and analogical projection into them of our experience with ourselves." Things are now regarded as active and passive. (5) The later abstract conceptions of causation are generalised from the same experiences, and can never acquire a different import from these. (6) This process of generalisation itself is mental. "Science is only a system of abstractions unless we admit the metaphysical import and validity of the work of the human intellect." "Causality is most originally and concretely an experience of relations between body and mind." (7) It is, therefore, impossible to state the law of causation so as to annul the force of the experience in which the notion originates.

The matter might be left here, were it not that rival metaphysical

views claim to give a better interpretation to the results of psychological science. The appeal lies to three sets of phenomena: experiences which lead men to conceive of both mind and body as really existent, mental changes dependently connected with precedent known bodily, and bodily changes apparently dependently connected with precedent known mental. (Concomitant correlation is not an immediately known and undeniable fact.) A detailed consideration of these phenomena only serves to confirm the position originally taken up.

All forms of speculative opinion regarding the real relations of man's body and mind may be reduced to four: materialism, spiritualism (ch. ix.), monism and dualism (ch. x.). The two first agree in acknowledging one kind of real being (body or mind); monism posits a real being which is neither of the two. The discussion of materialism seems unnecessarily tedious and minute: although the author meets this criticism by anticipation, and refuses to recognise its validity. On the other hand, the polemic against over-hasty monism is abundantly justified. "Current psychological monism becomes dogmatic agnosticism at the very place where true philosophical monism takes hold of its problems." Psychological dualism, or dualism as the metaphysical explanation of the two orders of phenomena in the life of man, is the only tenable hypothesis: though it is not inconsistent with philosophical monism.

There are two further questions which must be mentioned, because of their intimate connection with the foregoing, though their final solution belongs to other domains of philosophy: those of the origin and permanence of mind (ch. xi.). Various explanations of origin (spatial, biological or traducian, creationist) are stated, and the conclusion reached that "the existence of mind with respect to its origin, as well as with respect to the degree of its existence, is nothing apart from those activities in which the life and growth of mind consist." The treatment of permanence simply puts the problem 'into shape' for religion and ethics. One point, however, is discussed in detail: the attitude of the metaphysics of mind to 'unconscious' or 'subliminal' psychical processes. The assumption of entirely subliminal but genuinely psychical activities is unnecessary. "The existence which unconscious minds have, if they are to be thought of as having any existence at all, can be nothing but a certain abiding relation to all reality." The reason for all those performances in our consciousness which give token of a mentality of which we are not conscious must be demanded of general philosophy. It is best given, in the writer's view, by philosophical monism.

The concluding chapter is entitled "The Place of Man's Mind in Nature." The whole subject of immortality requires new psychological and metaphysical treatment. The 'arguments' are really considerations which tend to render faith or hope reasonable. "Our reliance must be upon philosophical conceptions of the Being of the World (the nature of the World-Ground) and of the relations which

the being of the human mind sustains to such Universal Being, in order to raise this faint confidence in the possibility of the immortality of mind to the condition of a firm, rational faith or hope."

Professor Ladd is a veteran in both the fields which this Essay touches. On the one hand stands his *Introduction to Philosophy*; on the other a series of four standard psychological texts. His opinions, therefore, are fully entitled to the respect "which has been earned by the careful study of mental phenomena from all possible points of view" (pp. 81, 82). Although the questions raised in the present volume are all familiar, they are here for the first time brought together as special problems of a definite department of knowledge. The judgment of philosophy and psychology cannot, however, be passed upon the answers returned by the author, until the promised Metaphysics has appeared. For these answers are ultimately based upon his general philosophy; and, in so far as they are answers in terms of metaphysics, natural-science criticism is out of court. The author is not proposing new methodological assumptions for psychology; but is making explicit assumptions which he believes to be always implicit, whatever the profession of the psychologist[1]. Finally, certain logical criticisms which might perhaps be passed upon his formation and employment of the concept of mind will, in all probability, be rendered invalid by the forthcoming metaphysical system.

E. B. TITCHENER.

---

*The Pathology of Mind. A study of its distempers, deformities and disorders.* By HENRY MAUDSLEY, M.D. London: Macmillan and Co., 1895. Pp. xi., 571.

*Psychologische Arbeiten.* Von EMIL KRAEPELIN. Band I, Heft IV. Leipzig: Wm. Engelmann, 1895.

DR MAUDSLEY describes his book as virtually new though retaining the same name as that published in 1879. The general arrangement of the book has been much altered; the chapters on sleep and hypnotism with which the former book began, have been omitted, though many of the facts in those chapters find their place as illustrations throughout the book. The whole subject is treated in a more general way, and the author avoids as much as possible the division of mental disease into definite groups with assigned names, retaining, however, the main lines of classification usually adopted in this country. One new feature is that those cases which in the former edition were described as examples of monomania, are treated

[1] I think that there are arguments to be urged against Professor Ladd in this connection: cf. *Mind*, Jan., 1895, pp. 110, 111; *Phil. Rev.*, III. p. 725.

as insane deformities of mind, and this idea of malformity of mind is developed at some length.

The descriptions of the chief types of insanity are, as in previous editions, the most interesting feature of the book; the author brings before the reader the chief characteristics of mental disease in a series of vivid word-pictures which are in themselves sufficient to make the work a classic. There is however a definite doctrine running through the whole work which, advanced by so distinguished an authority as Dr Maudsley, may do much to retard the study of insanity in this country. Dr Maudsley endeavours at every opportunity to persuade his readers to disregard the psychological aspect of mental disease and to look solely at its material aspect as brain disorganisation. The following extract is a typical example of teaching which is constantly recurring: "No one can ever understand the real nature of these examples of decomposed will who, viewing them from the standpoint of mind in disorder, tries to discover a mental explanation of them and to set it forth in the language of psychology. The truth is that psychology has no terms for them, and that its principles exclude their existence. Let him view them from the standpoint of a physical disorganisation which causes a disintegration of mind, substituting the informing conception of a definite mental organisation for the barren notion of abstract mind, and he will then be in the right way to perceive what they really are and what decomposition of will means" (page 245). Dr Maudsley does not seem to recognise the possibility of a scientific psychology to be developed side by side with our knowledge of brain structure, which may be mutually helpful, each advance on one side throwing light upon the other. Moreover when we turn to the chapter on the morbid anatomy of insanity we find that the author confesses that little light is thrown on the symptoms by our knowledge of the disorders of brain structure; he says "The intimate chemical and molecular changes which are presumably the conditions of mental disorder go on in a domain of nature the subtilties of which yet far exceed the subtilties of observation" (page 515). It seems as if the general tendency of the book must be to discourage the scientific study of mental pathology in any direction, and to encourage a state of satisfaction with the loose classification and metaphorical description which characterise so largely the pathological branch of mental science. Experimental psychology is barely mentioned, although it is probable that here we may find a clue to the solution of some of those problems which Dr Maudsley regards as insoluble, and the second book mentioned at the head of this notice represents an attempt to throw light on mental disease by methods which in the first are regarded as impracticable.

Professor Kraepelin is one of very few investigators who combine the study of experimental psychology with the care of the insane. He has a laboratory in connexion with the asylum at Heidelberg, and proposes now to issue a series of "Psychologische Arbeiten," in

which the methods which his great experience in the systematic investigation of mental capacity has led him to adopt, will be applied by himself and by his pupils. The chief feature of the first number is an introduction by Prof. Kraepelin, in which he describes the principles and methods according to which the researches will be conducted.

The author recognises that any method of examining the mental capacity of the insane must first be tried on one normal individual very thoroughly with the view of discovering all the factors likely to influence the investigation; it must then be tried on a number of normal individuals, especially with the view of discovering the influence of personal idiosyncrasy, and, finally, the method may be proved on normal individuals under the influence of various abnormal conditions. The researches in the present number are devoted to these preliminary inquiries, and it is probable that many of those to follow will have a similar aim.

Dr Kraepelin calls attention to the fact that mental diseases in their early and most instructive stage of development do not often come under the hands of the physician, or if they do, are not in a condition to make exact investigation practicable, and he proposes to supply this deficiency by investigation of the effects on mental capacity of such influences as fatigue and drugs. These are not only frequent factors in the causation of insanity, but produce even in moderate amounts mental effects which are identical in nature with those of many forms of incipient insanity. This is a line of research in which the author has already done much valuable work which will be continued in the present series.

In the introduction the chief experimental methods to be employed and the kinds of mental capacity to be investigated are also considered. The former include the measurement of the time taken by various mental operations such as counting, adding numbers, learning syllables in the method developed by Ebbinghaus; the formation of associations, a method of investigating the insane first put in practice by Galton in comparative experiments on normal and imbecile children; reading and writing;—and for the exact study of the latter Dr Kraepelin has devised a special ingenious apparatus.

The time taken by these various mental operations is to a certain extent regarded as a guide to mental capacity, but special attention is also paid to such facts as false reactions and degree of accuracy of the work done, and it will doubtless be one of the chief aims of the series to determine the deviations which are of most value as indications of disordered mind.

The kinds of mental capacity which the author regards as within the scope of experimental inquiry are chiefly included under the three heads of capacity for the perception of sensory stimuli, for the association of ideas, and for voluntary movement. The influence of practice and the persistence of the effects of practice, the influence of fatigue and the capacity for recovery from fatigue, the depth of

sleep and the capacity for concentration and deviation of attention are among the conditions which have been investigated, and a scheme is given by which many of these points may be tested in a large number of individuals.

The present number contains two other papers; one by A. Oehrn, "Experimentelle Studien zur Individualpsychologie"; the other by S. Bettmann, "Ueber die Beeinflussung einfacher psychischer Vorgänge durch körperliche und geistige Arbeit." The scope of the latter is indicated by its title; the former is a dissertation which has been reprinted because it affords a typical instance of the kind of investigation which Dr Kraepelin intends to publish in the series, and as a good example of the application of his methods. Several of the methods are employed on a number of individuals with the view of eliciting the presence of personal idiosyncrasy, and the author brings out several points of interest, for instance some results on the different capacity for mental work in different individuals in the morning and evening. The systematic investigation of the mental constitution of different individuals is much wanted; it is a line of research which can best be carried out by physicians who are familiar with differences of physical as well as of mental constitution, and this branch of his work alone would justify Prof. Kraepelin in undertaking to issue his series of "Psychologische Arbeiten."

W. H. R. RIVERS.

## VIII.—NEW BOOKS.

*The Female Offender.* By Professor Caesar Lombroso and William Ferrero. With an introduction by William Douglas Morrison, Her Majesty's Prison, Wandsworth. London: T. Fisher Unwin. Pp. 313.

This is the first of a series of volumes on criminology which is to be issued in England by Mr Unwin and in the United States by Messrs Appleton of New York. The present volume is a translation of that portion of Professor Lombroso's *La Donna Delinquente* which deals with the female criminal. It is written on somewhat the same lines as the same author's *L'Uomo Delinquente*, and is a further exposition of his opinions as to the origin of crime and the nature of the criminal character. Dr Lombroso's distinctive merit as an investigator of the problem of criminal conduct and criminal character consists in the fact that he has approached the subject from a biological point of view. He is not the first inquirer who has looked at the subject from this point of view, but he is entitled to the honour of being the first who has done so in a comprehensive and systematic manner. It is often asserted by Dr Lombroso's critics that he regards crime as a product of purely biological conditions, and no doubt his earlier publications were open to this charge. He is, however, perfectly willing to admit that criminal conduct is a product of social as well as biological conditions: what he will not admit is that this kind of conduct is merely a result of the social circumstances in which the offender happens to be placed. In contending against this assumption Dr Lombroso is supported by an overwhelming weight of evidence. Crimes are constantly being committed with which adverse social conditions have comparatively little to do, and on the other hand vast numbers of the population who have to live amidst very wretched social circumstances of all kinds yet remain unstained with crime. In the light of these facts Dr Lombroso is rightly led to the conclusion that crime springs from individual as well as social conditions, and the problem which he has set himself to solve is the nature of these individual conditions. At the time Dr Lombroso commenced his enquiries Darwin's theory of organic evolution had just taken possession of the scientific world, and the Italian professor's conception of the origin of crime was in its original form an attempt to explain the conduct of the criminal in accordance with the Darwinian theory of atavism. According to Darwin atavism is the reversion of a descendant to a peculiarity or set of peculiarities characteristic of a more or less remote ancestor. The manner in which this law operates in the biological world is exceedingly obscure, but there is little dispute as to the fact that it does operate. Instances of atavism are usually instances of reversion to a less highly developed organic type. In the moral world criminal conduct is conduct of a less

highly developed character than the average type of conduct which is maintained among the members of the community to which the criminal belongs. It may be described as a reversion to a less highly evolved kind of conduct, as an instance, in short, of moral atavism. Assuming that criminal conduct is an instance of moral atavism, we are led to ask whether this undeveloped form of conduct is the outcome of atavistic characteristics in the individual who is addicted to it. It is the purpose of Dr Lombroso's writings to shew that atavistic conduct is a product of atavistic mental and physical conditions. It is impossible in the space at our disposal to enumerate the atavistic *stigmata* which Dr Lombroso discovers in the criminal. As far as regards mind they may be briefly summed up as consisting of intense egoism, want of sympathy, extreme impulsiveness, no persistency of purpose, in short, the predominance of the same sort of mental characteristics as are found in the child and the savage. The mental life of children and inferior races is regarded by Lombroso as being a sort of reproduction of the mental life of civilized communities in the earlier stages of their evolution. This undeveloped form of mental life is a characteristic of criminal psychology. The criminal is accordingly pronounced to be mentally as well as morally atavistic. The next and last step to be taken is to enquire if this condition of mental and moral atavism is accompanied by any corresponding physical *stigmata* of an atavistic character. Dr Lombroso assures us that the criminal population as a whole, but the habitual and deep-dyed criminal in particular, exhibit a high percentage of atavistic peculiarities in bodily structure and function. Some of the more prominent of these peculiarities are narrowness of forehead, exaggerated development of the frontal sinus, prognathism, predominance of the face over the upper parts of the skull, precocious development, a greater resemblance between the two sexes, greater uniformity of features, and obtuseness of physical sensibility. Criminal conduct is, accordingly, the natural outcome of the atavistic physical and mental condition of the person who perpetrates it. These atavistic conditions are often accompanied by pathological conditions, and the criminal in a large number of instances exhibits the physical and mental *stigmata* of degeneracy as well as the physical and mental *stigmata* of atavism. Degenerate physical and mental conditions, inasmuch as they disturb the normal working of the organism, have a tendency to produce atavistic modes of conduct, and this has led many inquirers to assert that the criminal is merely a degenerate, and that crime is the result of diseased and not atavistic conditions. This is the position taken up by Dr Charles Féré in his interesting work *La Famille Neuropathique*. But a certain proportion of criminals shew no signs of degeneration, and many degenerates are not criminals. The doctrine of degeneration standing by itself does not afford a complete explanation of all the facts. Dr Lombroso considers that this explanation requires to be completed by his theory of atavism. Crime is accordingly a product of the atavistic and pathological conditions of the organism. It is easy for superficial observers to ridicule Dr Lombroso's views as to the biological origin of crime. It must be admitted that the manner in which he has presented them is not always the most effective, and it must also be said that his writings are not always free from a certain hastiness of statement and a disposition to generalise too rapidly from isolated if significant facts and instances. But we must take him with the defects of his qualities. It cannot be denied that he has produced a great body of sound substantial work, and the general truth of his theory is not seriously affected by the circumstance that some of the details which he brings forward in support of it break down under cross-examination.

*Æsthetic Principles.* By Henry Rutgers Marshall, M.A. New York: Macmillan and Co., 1895. Pp. vii., 198.

Mr Marshall has done well to follow up his larger work, *Pain, Pleasure, and Æsthetics*, by this interesting little volume. We are much in need of a good introduction to Æsthetics and Mr Marshall's conception of the subject lends itself on the whole to a popular treatment. The present volume differs from its predecessor by dwelling less on the general theory of pleasure and pain and much more fully on the distinguishing features of æsthetic phenomena. For popular treatment the distinctions drawn between 'The Observer's Standpoint,' 'The Artist's Standpoint,' and 'The Critic's Standpoint' are appropriate and interesting. The several discussions under these heads are supplemented by two chapters in which are given such deductions from the general laws of pleasure and pain as seem to the author to be most important by way of improving both artistic production and our judgments on art.

The work is clearly and pleasantly written and should aid artists as well as amateurs and critics in getting clearer ideas of the aims of art and of the limitations under which it works. Mr Marshall seems to be especially interested in architecture and music, from each of which fields he draws good examples. It might be suggested that more examples would add to the interest and value of the exposition.

While the book is to be welcomed as in many respects a useful introduction to a deeper study of Æsthetics it has certain weak points, some of which, at any rate, might well be strengthened in a future edition. It seems very doubtful whether there is much force in the argument developed on pp. 10, 11 that the doctrine of an absolute principle of beauty is incompatible with variety of æsthetic judgment and the fact that a man may perceive beauty under one form of manifestation, say music, but not under another, as painting. It is allowed by the absolutist that the idea is apprehended through the stimulus of some concrete sensuous intuition, and it may very well be that in some minds the apprehension is excited more easily by some one form of sensuous manifestation. On p. 20 the author seems to deny that there is any real distinction between æsthetic and other pleasures, instancing the habit of young people in speaking of 'beautiful sweets' and of having 'a beautiful time.' The 'beautiful sweets' seems a very doubtful illustration of the author's point, since sweetmeats appeal alluringly to the young eye; and the expression 'to have a beautiful time' appears to illustrate the reference to pleasurable *objective* experiences which runs through all our æsthetic terminology. The contradiction which the writer attempts to fasten on Matthew Arnold's two views of poetry (p. 48) might be made clearer. The treatment of the fundamental character of the art-impulse (p. 55 *ff.*) needs some reference to early forms of art-activity in the child and in the race. Such reference would not only clear up the writer's view but seems necessarily to belong to his recognition of an art-instinct in the race. It seems strange that in touching on the social and sympathetic side of art (p. 79 *ff.*) no reference is made to all the binding action of a common love of art, as seen in musical societies, Shakspeare societies and so forth. This is probably a much more important aspect of the social side of art than that emphasized by the author, *viz.* that which grows out of the pleasure-giving function of art-production. One does not see why the writer in dealing with the different standards suddenly leaps (p. 93) from a purely individual standard to that of "the highly cultivated man as we conceive him." It is probable that most people's standards are neither the one nor the other but those set up and enforced

by particular æsthetic communities, varying from the broad loosely defined feeling of a people at a given time to the very definite views of schools and cliques. One may be permitted to doubt whether the philosophic theory of an absolute beauty has anything to do with the exhaustiveness of art-interest which the author seeks (p. 99 *ff.*) to derive from it.

The new account in this volume of the theory that we can only ascribe æsthetic value to pleasure in so far as it is revivable, more particularly what is said on pages 113 to 117, seems darker than that in the larger work. Mr Marshall now plainly allows that the artist may give us 'presentative pleasure' even when this is not revivable, but how this concession is to be reconciled with his repeated definitions of æsthetic pleasure, it is hard to see. The theory of wit expounded (p. 163 *ff.*) will be apt to seem rather obscure to a young student and is hardly cleared up by the single example given on p. 167. The slight discussion of the active factor in æsthetic enjoyment (p. 177) should certainly include a reference to Dr Ward's striking theory. A little revision with reference to these and other points would make the volume much more useful, though the author may well think that some of the objections here urged are directed against his main contention.

J. S.

*On Sensations from Pressure and Impact: with Special Reference to the Intensity, Area, and Time of Stimulation.* By H. Griffing, Ph.D. Psychological Review: Monograph Supplement, 1. February, 1895. Pp. 88.

This monograph is devoted to a systematic discussion of the relations existing between the intensity, area and time of cutaneous stimuli and the resultant sensations and impressions. Dr Griffing begins with a careful investigation of the qualities of dermal sensation. Temperature is an independent sense. Weber's thaler-phenomenon, the only basis for the claim that it is related to pressure, is found to hold only for small masses, and is shown to be due to an illusion of judgment. Pain is classed with tickling, itching, etc., as a semi-organic sensation. In justification of this view the author brings forward (in addition to the arguments from pathology) the results of his experiments on the time of stimulation. Here he found that while slight pressure sensations vanish as the time is increased, more intensive sensations increase until they become distinctly painful. This phenomenon is explained on the assumption that it is the subconscious painful sensations which increase with the time, while the disparate pressure sensations decrease. In haptic sensations are recognised sensations of simple pressure, of traction and of impact. *Pselaphesia* or pure touch is not distinct from pressure. The only difference between them is that the latter involves a consciousness that muscular effort would be needed to remove the stimulus. This is not present with the lower intensities of stimulation, which give rise to the so-called sensation of pure touch. Besides these purely dermal sensations, we have the compound sensations resulting from their mixture with kinæsthetic elements.

Experiments by the method of *r.* and *w.* cases gave results in accordance with Weber's law for weights greater than 100 gr. The ratio of the probable error to the stimulus varied with individuals between $\frac{1}{5}$ and $\frac{1}{10}$, with an average of $\frac{1}{8}$. The limen was not constant for the same individual. The intensity of pressure causing just noticeable pain was slightly less on

the average for women and boys than for men, though the difference was less than the individual variation. The range of pressure was found to be about 1700 for two reactors. Estimates of intensity of stimulus in terms of a unit increased more slowly than the logarithms of the stimulus for small intensities, but much more rapidly for large intensities. The limen of pressure was found to be nearly constant for different parts of the body, though the finger-tips were slightly more sensitive than the wrist or palm of the hand. The pain limen varied with the thickness of the skin and the amount of subcutaneous tissue : it was lowest over the frontal and temporal bones and highest for the heel and the fleshy parts of the leg and hand.

Impact gives a sensation different in quality from simple pressure. The limen for impact is much lower than for pressure : 0·01 gr. is not noticeable, on the average, with impact ; 0·4 gr. with pressure alone. The pain limen for impact as measured by the mass into the square of the velocity was found to be fairly constant. A mass just noticeably painful when exerting pressure only gave a just painful sensation of impact when it fell through a distance of 4 mm. The mass is of more influence in the estimation of impact sensations than the velocity, but of less influence than the square of the velocity.

There was found to be a decided overestimation of a mass applied to a small area as compared with the same mass applied to a large area : 200 gr. upon $\frac{1}{8}$ cm. of surface seemed a third heavier than the same mass on 8 cm. surface. When the writer is drawing conclusions from these experiments, however, he overlooks the fact that when the larger area is stimulated, the pressure on each unit-area is only $\frac{1}{64}$ as great as when it is applied to the smaller area ; and consequently infers that intensity decreases inversely with the logarithm of the area. What the experiments really prove is that an increase in intensity produces a greater effect upon sensation than the same relative increase in extensity. This slip is the more remarkable, as in interpreting the same phenomena in impact sensations, Dr Griffing gives a correct analysis of the problem and explains the decrease in intensity in the sensations from the relatively increased protective effect of the tissue. The pressure limen increases more slowly than in direct proportion to the area: the pain limen increases approximately as the logarithm of the area. The relative sensible discrimination was approximately constant for all areas. Discrimination of differences in area was more exact for the less intensive pressures.

The author is inclined to deny the existence of intensity as distinct from quality of sensation. Sensations, he argues, are not quantitative, as physical forces are quantitative. Nor can we define intensity as the continuous change in sensation functionally related to intensive change of stimulus, since we have continuous changes which are not related to changes in subjective intensity, as pitch, colour and the sensations accompanying changes in area. He defines intensity, provisionally, as the quantitative change in a neural stimulus which determines whether it gives rise to a sensation and whether that sensation is painful. A similar argument, however, would hold almost as strongly against space and time. In the last analysis they are all mere differences (qualities) of sensation. But if the four distinct types of difference exist, it is as well to recognise them for methodological purposes. The author was evidently not successful in his attempt to make himself clear without the limen: as the value is frequently used throughout the work. He also extends the arguments against the existence of a difference-limen to include the absolute limen. Judgments as to the pressure of a very small stimulus show a preponderance of correct guesses, even though the observer feels himself entirely in

doubt. This argument seems to prove it a variable quantity, but not that it is non-existent. That it is a useful concept even if an arbitrary one is shown, as was said above, by its continuous use throughout the monograph.

As a whole, this is a most valuable contribution to the psychology of the skin. The experiments are numerous and exhaustive, and the results indicate that they have been carefully performed. The inferences, almost without exception, have been cautiously and conservatively drawn: the whole tone is accurate and scientific. The work should be to passive pressure what that of Mueller and Schumann is to lifted weights.

W. B. Pillsbury.

*John Stuart Mill: a Study of his Philosophy.* By Charles Douglas, M.A., D.Sc., Lecturer in Moral Philosophy, and Assistant to the Professor of Moral Philosophy in the University of Edinburgh. Edinburgh and London: William Blackwood and Sons, 1895. Pp. xv., 274.

This is decidedly the best book which has yet been written on J. S. Mill. It is critical, but the criticism is of the very best kind. Fallacies and inconsistencies are dwelt on, not so much for their own sake, as in order to bring out the permanent and valuable fruits with which they are associated and contrasted. Mill is regarded throughout, not as an awful example of what individualism and sensationalism may lead to, but as a link connecting the philosophy of the last generation with that of our own. The incoherence of his philosophy is shewn to be a consequence of what is best in it. He fell into self-contradiction, because the natural development of his thought led him to new points of view incompatible with his inherited creed. The line of criticism adopted by Mr Douglas cannot be better indicated than it is in the following passages from his introductory chapter: "The theory of Induction, which is his most important contribution to the science of logic, avowedly rests upon a doctrine of causality which is not that of sensationalism. He makes use of a conception of the causal relation in which it is regarded not as mere succession of ideas, but as unconditional dependence of fact upon fact. In the same way, his recognition of a self, other than transient states of consciousness, however unsatisfactory the manner of it may be, betrays a consciousness that knowledge is not merely a sequence of ideas. Still more significant of this conflict within his philosophy is the profoundly ethical cast of his Hedonism—his tendency to subordinate the hedonistic conception of moral good to a way of regarding it which makes it consist, not in a mere effect upon feeling, but in objective personal qualities" (p. 5). "It is with the force of genuine conviction that he asserts the reality of voluntary choice, and its significance both as a means of human welfare and as the expression of personal life; while it is still more notable that he recognises the social character of moral criteria, that the internal sanctions of morality bulk largely in his mind, and that he is aware of the very limited extent to which the moral good of individuals is indicated by their subjective feelings" (p. 9). "The idealistic elements in Mill's thinking are really internal to his point of view... They represent the effect in his own mind of new ways of thinking, to which he was singularly responsive, and by which he was profoundly influenced" (p. 8).

*Dualism and Monism, and other Essays.* By JOHN VEITCH, M.A., Hon. LL.D. (Edin.), Late Professor of Logic and Rhetoric in the University of Glasgow. With an Introduction by R. M. WENLEY, M.A. (Glas.), D.Sc. (Edin.), formerly Assistant to the Professor of Logic and Rhetoric in the University of Glasgow. Edinburgh and London: William Blackwood and Sons, 1895. Pp. xlii., 221.

This little volume consists of three essays, selected by Mr Wenley from "the large quantity of MSS. left by the late Professor Veitch." The first, entitled *Dualism and Monism*, was left ready for publication. It is a criticism of M. Dauriac's *Croyance et Réalité*. In opposition to M. Dauriac's thesis, that consciousness and extension exist only in relation to each other, Professor Veitch insists that relation presupposes the distinct existence of the terms related. He appears to have no suspicion that in urging this point he is merely stating a problem that demands solution; and that he is in fact going back to the position of Hume. Inasmuch as relation presupposes the distinct existence of its terms, relational categories must be inadequate. The second essay is the first chapter of a work which "was intended to embody a history of the leading doctrines of Greek Philosophy with special reference to the theory that the history of philosophy is a record of 'progress by antagonism.'" The third, on *The Theism of Wordsworth*, is a sympathetic and interesting discussion of the mystical view of nature which pervades the writings of the poet. It belongs, however, rather to the region of literary criticism, than to that of philosophy.

*Atlas of the Human Brain.* By E. FLATAU. Translated by WM. NATHAN and JOHN H. CARSLAW, with a preface by Prof. MENDEL. Glasgow: F. Bauermeister, 1894.

This contains eleven large, well executed photographs, in which the chief exterior and interior features of the human brain are clearly shown. There are also thirteen figures showing by means of coloured lines the chief nerve paths of the brain and spinal cord, accompanied by a good description of the course of the nerve fibres. In these figures the knowledge acquired by much recent work has been represented, but it is a question whether some of the features shown and described can be regarded as well established; as an instance of such may be mentioned the continuation of the ascending antero-lateral tract to the cortex of the cerebrum. The atlas is intended chiefly as an accompaniment to clinical teaching, but should prove useful to anyone teaching or studying the structure of the nervous system.

*L'Année Philosophique.* Publiée sous la direction de F. PILLON. Cinquième Année, 1894. Paris: Félix Alcan, 1895.

A yearly review of philosophic literature, produced by a single country, possesses a peculiar value, in giving a general view of contemporary tendencies, which one misses in the perusal of publications as they issue from the Press. From this point of view, the works reviewed in *L'Année Philosophique* afford no small insight into the present tendency of philosophy in France. The most noteworthy feature is the preponderance of original over translated works,—only one-twelfth of the books noticed being ranked under the latter class; and it is most remarkable that there have been printed more translations of English than of German works, and that, in this respect, Italy and Germany rank together. Another

point of interest is the manysidedness of French thought, which, in a thoroughgoing desire to keep in touch with actuality, classes as "philosophical," *A Parallel between Adam and Jesus Christ, Passive Anarchy and Count Tolstoi*, and studies upon *Lourdes*, Taine, Renan, and Victor Hugo. It would be unjust to pass over this part of *L'Année Philosophique* without more than a word of praise to M. Pillon (who is responsible for the "Bibliographie") for the eminently critical and conscientious manner in which this portion of the work is executed.

The longest article is a continuation of M. Pillon's *L'Évolution de l'Idéalisme au XVIII^e Siècle*, which deals with the Philosophies of Spinoza and Malebranche. The most remarkable feature in this study is the inversion of the order usually assigned to these thinkers, Spinoza being connected directly with Descartes without the intervention of Malebranche, or even Geulincx, as a connecting link. Spinoza's system is derived from that of Descartes through the analysis of "extension," and hence eventually results the "logical priority" of this attribute to thought, in which decision M. Pillon differs widely from the majority of critics. The grounds upon which the theory is based will be the subject of further notice, so that it is sufficient to say, for the present, that the position is advanced with great ingenuity and supported by an exhaustive criticism of the system as a whole, in which M. Pillon has been exceptionally fortunate in escaping the intricacies of the demonstration *more geometrico* of the *Ethics*. The portion of the article, relative to Spinoza, concludes by a comparison of Substance with the "Being" of the Eleatics, but to make the parallel exact, the primacy, given to the attribute Extension, tends to deprive Being of the idealistic interpretation usually assigned to it. Malebranche, M. Pillon argues, has been misconceived and misplaced by previous writers; both chronologically and in systematic connection he succeeds rather than precedes Spinoza, and his system occupies a position parallel to that of Leibnitz in correcting the errors of Spinoza's Substance.

In *Le Phénoménisme Neutre*, M. Dauriac takes his text from *L'Idée du Phénomène*, published last year by M. Boirac. M. Boirac traces the elements of Phenomenalism in preceding systems, discounting the special noumenal supplement of each, professing at the same time to occupy a "neutral" position towards the problems of Metaphysics, and in the subsequent criticism M. Dauriac investigates how far this neutral position is tenable. The remaining article upon the doctrine of St Paul by M. Renouvier, though of interest, is scarcely "philosophical" in the sense in which the word is now used in this country.

*La Psychologie du Beau et de l'Art.* Par MARIO PILO, Professeur du Lycée *Tiziano* de Bellune. Traduit de l'Italien par AUGUSTE DIETRICH. Paris: Felix Alcan, 1895. Pp. 180.

This essay is an attempt to formulate a science of æsthetics by the light of modern psycho-physical research. The tendency of every sentient organism to attain and retain states of pleasurable consciousness is the central fact of our author's system. Hence, his definition of the '*beau*,' which he identifies with the pleasurable,—"*le beau est donc ce qui nous plaît*" (p. 5). It is the nature of a pleasurable state of perceptive consciousness to transform itself into an act of volition. This is the fundamental psycho-physical law, due to Stricker, and upon this law the plan of the present work is based (p. 7).

A pleasurable impression is the material of the *beau*, and the study of the sources and the play of such impressions is the subject of the first half

of the essay. On the other hand the active or creative impulse, the *expression* accompanying every *impression* of the beautiful or pleasurable is æsthetic Art, the analysis of which forms the second part of the work. The two chapters making up the first part deal respectively with the sensorial and the spiritual elements of æsthetic consciousness.

Sensorial pleasure seems to be inherent in all conscious activity of the sense organs, and, as activity implies change, most beautiful effects are attributable to comparison and contrast. Monotony is the enemy of beauty. In treating of the spiritual factors of the consciousness of beauty the author is careful to intimate that the term spiritual is only used in a psycho-physical sense, *i.e.* no difference of kind is implied between the sensory and spiritual modes of consciousness. Both are equally nerve currents, and the spiritual is only a more rarified form of nerve energy, less pure, fresh and vivid than sensory stimulation (p. 20). There are three species of spiritual beauty,—*le beau sentimental, le beau intellectuel, et le beau idéal.*

The æsthetic art from a psycho-physical point of view is a reacting outgoing nerve current, corresponding to an afferent flow of nerve-force generating the consciousness of beauty. There are four species of æsthetic action,—*l'art réflexe, l'art imitatif, l'art critique, et l'art créateur* (p. 83). Reflex and imitative art are the simplest kinds of organized movements corresponding to sense stimulation—as dancing to sound—mimicking to sight and sound. Critical art is the expression or the communication to others of the impression some beautiful object has made upon ourselves. *L'art créateur* is the product of the constructive imagination, not very easily distinguished from the critical art. The function of each is to convert the subjective into the objective. There is much minute analysis in this essay, but the refusal to admit any but rigidly materialist hypotheses detracts from its value. In the first page the author remarks that 'the explanation of æsthetic phenomena with purely psycho-physical data has not been successfully attempted,' and we are inclined to agree with him.

T. W. Levin.

*De l'Idée de Loi Naturelle.* Cours de M. Emile Boutroux. Professé à la Sorbonne en 1892–1893. Prix : 2 fr. 50. Paris : Félix Alcan, 1893. Pp. 143.

In his study of the significance of natural laws M. Boutroux has in view the question of determinism ; and is led by his extensive but brief survey to the conclusion that, so far from imposing necessity upon us, the mechanical laws of nature have set us free. There is, he says, no such thing as "matière brute," and that which constitutes the essence of matter is in communication with that which constitutes the essence of spirit ; while "laws of nature" consist in the whole of the methods by which we assimilate things to our intelligence, and mould them to the accomplishment of our wills. He begins by discussing the relation between universality and reality, and finds between them an opposition which is not to be overcome by Philosophy, and which leads to the two extremes of rationalism and empiricism. These extremes science alone can reconcile, by combining mathematics with experience, and so furnishing us with laws which are both concrete and intelligible. The remainder of the book is devoted to examining the nature, objectivity and signification of these laws within eight departments of science,—logic, mathematics, mechanics, physics, chemistry, biology, psychology and sociology.

Without following the author throughout the whole hierarchy of

sciences we may note his views upon one or two of them. In dealing with the highest (or lowest?) in the scale, he argues that in proportion to the intelligibility of the laws obtained they are lacking in application to reality. Logic, for instance, is the most perfect type of absolute necessity; but presents a minimum of objectivity. "Elle régit la surface des choses, mais n'en détermine pas la nature"; the laws of pure logic have little or nothing to do with the inner nature of things. But inasmuch as we find in nature something like classes of beings or species, and something like classes of facts or laws, there must be some relation between intelligence and the nature of things in general; we must admit a sort of tendency in nature towards intelligibility. Mathematical laws, again, though approaching nearer to reality than those of logic, are still debarred from realization by their implication of infinite number,—a thing absolutely inconceivable.

In Psychology M. Boutroux protests against eliminating the soul, which is the special postulate of the science, and affords the possibility of a spiritualist metaphysic. The being endowed with a soul is not merely an end, such as the being endowed with life; it can set before itself an end, and imagine the means for realizing it. Hence there are two kinds of Psychology; that which is really human, and cannot abstract from the faculty of reflexion which constitutes man; and animal Psychology, to which belong the psychical manifestations of man in so far as he does not control the forces within him. The mechanism determined by this second Psychology is the instrument employed by the liberty revealed by the first, and serves as a link between liberty and nature.

H. Dendy.

*Philosophie und Erkenntnistheorie.* Von Dr Ludwig Busse, Privatdozenten der Philosophie an der Universität Marburg. Leipzig: S. Hirzel, 1894. London: Williams & Norgate. Pp. 288.

The substance of this work was originally presented in the form of Lectures delivered to the students at the University of Tokio, in Japan, where the author was Professor (1887–1892). The aim, he says, was to mediate between the critical and dogmatic schools; and the two parts of this essay are devoted respectively to the consideration of Metaphysics from each of these points of view, (1) Critical, (2) Dogmatic. The first 120 pages of this dissertation are devoted to a somewhat threadbare theme—the relativity of knowledge. It may be useful, however, to remind agnostics who are not logicians that even the most sceptical and subjective attitude in philosophy cannot dispense with an *a priori* standpoint,—*otherness* is implied in the most rigid solipsism; and dichotomy is a condition of human reasoning. After having demonstrated in Part I. the untenability of the purely empirical method in Epistemology, Dr Busse proceeds in Part II. to reconstruct a system of philosophy on the lines laid down by Lotze. The single *a priori* assumption on which Dr Busse builds is that the necessities of thought are the forms of fact (p. 121). Reality he considers under three aspects, (1) Principles, (2) Matters of Fact, (3) Value or Final Cause. These elements are what mathematicians would term *independent variables*, each of which is a function of reality;—still in the absolute they meet as creative ideas or generating principles (p. 125). But in the universe of phenomena as apprehended by the human intellect *matters of fact* have no community of Being with the *relations of ideas*. This is Hume's position, which Dr Busse accepts. In treating of the third element of knowledge, the Why? or good of things, our author passes into the region of Ethics—the reality of moral distinction. He

naturally criticizes the position of Mill and the Utilitarians, which of course yields no ground for *a priori* moral value.

In conclusion Dr Busse quotes Kant's three vital questions of Philosophy:—What can I know? What shall I do? What may I hope? The solution of these problems our author promises in a future work, the preparation for which has been the object of the present.

T. W. L.

*Lose Blätter aus Kants Nachlass.* Mitgetheilt von RUDOLF REICKE. Zweites Heft. Königsberg: F. Beyer, 1895. Pp. 375.

A notice of the first series of these *Loose Leaves from Kant's Remains* was given in *Mind* (1889), vol. xiv., p. 299. The second series, which now appears in collected form after running through vols. xxviii., xxx., and xxxi. of the *Altpreussische Monatsschrift*, continues the publication of the Kant papers in the Königsberg Library which were roughly calendared by Schubert in 13 bundles. Following on the bundles labelled *A* to *D*, it gives us *E* (the most copious in the collection) and *F*. The notes and sketches contained in *E* chiefly belong to the years 1790–96, and deal in the main with Ethics, either as preliminary to the work on the *Metaphysic of Morals*, or as lecture notes by way of comment on the relative passages in Baumgarten's *Ethics*. The topic of a large number of notes is that of Sections 1–9 of the *Rechtslehre*, where he founds the law of property on the regulative or limitative 'idea' of a *communio originaria*, or maintains the fundamental position of the *Idealität des Besitzes*. One or two passages (in pp. 3, 10, 241, 257) discuss the 'point of honour' in reference to soldiers and women (cf. *Rechtsl.* § 49, *E*, 1). Among the ethical passages, however, special interest attaches to pp. 223 seqq. (dating from the years 1770–80) which may be with advantage compared with pp. 9–16 in Heft I. The latter passage (as suggested by Höffding in the *Archiv f. G. d. Philosophie* VII. 461, and by F. W. Foerster in his *Entwickelungsgang der Kantischen Ethik* (1894) p. 39) is probably to be dated about 1774. It marks a standpoint (analogous to that of the Protagoras in Plato's career) when Kant's phraseology does not yet display the bias to the transcendent which it exhibited in its subsequent language about 'intelligible' freedom and 'intelligible' world. Some still earlier notes are preliminary to his cosmical theory of 1755, and to his paper on Optimism.

The bundle *F* deals chiefly with political philosophy. A few passages from it had been published by Schubert in Rauner's *Taschenbuch* for 1838. Some of these are rough notes or first drafts for the essay 'Everlasting Peace,' and, as the editor notes (pp. 296, 321), give an example of Kant's method of working for the press. A remark on p. 286 shows him already in possession of the Hegelian idea of the history of philosophy, as other passages show him full of the plan of a philosophic system. Of notes bearing on intellectual philosophy there are but few. It may be added that a few biographical details emerge, most of these notes being jotted down on the blank spaces of letters, accounts, &c. It appears, *e.g.* p. 239, that Kant, like Lessing, once tried his fortune in a lottery.

It only remains to be added that by careful editing and by illustrative and explanatory notes Dr Reicke has admirably done his part (as on many former occasions) to facilitate the study of these interesting memorials.

W. W.

Received also :—

J. S. Mackenzie, *An Introduction to Social Philosophy*, Second Edition, revised and slightly enlarged, Glasgow, Maclehose & Sons, 1895, pp. 440.

T. Fowler, *Progressive Morality*, Second Edition, corrected and enlarged, London & New York, Macmillan and Co., 1895, pp. xi., 192.

J. J. Rousseau, *The Social Contract* (translated with Historical and Critical Introduction and Notes by H. J. Tozer), London, Swan Sonnenschein & Co., 1895, pp. 247.

J. B. Hilaire, *M. Victor Cousin sa Vie et sa Correspondance*, Paris, Félix Alcan, 1895, 3 vols., pp. 704, 657, 481.

Dr Lange, *Les Émotions* (traduit d'après l'édition allemande du Dr Kurella par G. Dumas), Paris, Félix Alcan, 1895, pp. 166.

A. Fouillée, *Tempérament et Caractère*, Paris, Félix Alcan, 1895, pp. xx., 375.

G. Lefèvre, *Obligation morale et Idéalisme*, Paris, Félix Alcan, 1895, pp. 154.

M. Apel, *Kants Erkenntnistheorie und seine Stellung zur Metaphysik*, Berlin, Mayer & Müller, 1895, London, Williams & Norgate, pp. 147.

J. Bergmann, *Die Grundprobleme der Logik*, Berlin, Mittler und Sohn, 1895, London, Williams & Norgate, pp. 232.

E. Parish, *Ueber die Trugwahrnehmung* (*Hallucination und Illusion*), Leipzig, A. Abel, 1895, London, Williams & Norgate, pp. 237.

S. De Sanctis, *I Fenomeni di Contrasto in Psicologia*, Roma, Tipografia dell' Unione Cooperativa Editrice, 1895, pp. 84.

A. P. Mauro, *Il Giudizio di Dio ed il Regno suo*, Catania, M. Calati, 1895, London, Williams & Norgate, pp. 67.

## IX.—PHILOSOPHICAL PERIODICALS.

In the INTERNATIONAL JOURNAL OF ETHICS for April, Professor **Mackenzie** discourses—suggestively rather than luminously—on "self-assertion and self-denial." His "essential point is that self-development and self-devotion are very nearly the same thing." Mr **W. M. Salter** writes on "Moral Forces in dealing with the Labour Question"; maintaining —with rather trite arguments and a rather inadequate group of economics —the "sober view that every one who contributes to the wealth of society is entitled to enough to enable him to live a properly human life." He holds that there should be "substantial equality of conditions," and that this is to be brought about by a general change in men's moral nature, leading them to "eschew greed." Mr **Lutoslawski** draws attention to the important "ethical consequences of the doctrine of Immortality," which doctrine he considers to have an irrefragable metaphysical basis in the "knowledge of self as a truly existing being, and of real existence as permanent." Dr **Lea**, in a learned article on "Philosophical sin," gives a history of the Catholic doctrine as to the difference between "Peccatum Philosophicum" and "Peccatum Theologicum," and as to the necessity of "advertence" in the case of the latter. Prof. **Ferri** writes on "National character and classicism in Italian Ethics." Mr **A. Döring**, after a careful and adequate analysis and comparison of the actual "Motives to Moral Conduct," decides in favour of "habituation to goodness and a clearly conscious desire of goodness as the satisfaction of the craving to justify one's existence," as being "that combination of motives which will serve best and most surely to realise the ideal of the ethical man." The discussion on "Rational Hedonism" is continued,—Miss **Gilliland**, Professor **Mackenzie**, Mr **Bradley** and Miss **Jones** contributing.

THE PHILOSOPHICAL REVIEW. Vol. IV., No. 2. **W. Fite.** 'The Priority of Inner Experience.' [The priority of inner experience (Wundt, Ziehen, Hoeffding) has its origin in a false analysis of phenomena and in the ambiguous meaning of the words 'mind,' 'consciousness,' and 'experience.' The inner world seems to consist only of actual phenomena, while the outer world consists of these phenomena *plus* other terms which are merely possibilities of the existence of phenomena. These terms are inferred in order to complete the concept of a real object in space and time: and thus the inner world seems to be the more immediately given.] **J. A. Leighton.** 'Fichte's Conception of God.' [Not a very thorough or complete account. "For Fichte God was living conscious spirit, or holy loving will, immanent in the world as its moral principle, and immanent in man as his own higher nature."] **E. B. Talbot.** 'The Doctrine of Conscious Elements.' [Points out the advance made in psychological analysis since the introduction of the experimental method, discusses the use of the term

'element' in modern psychology, and lays down the lines along which progress may be hoped for in the future.] Discussions: **J. E. Creighton.** "Professor Fraser's Account of 'Human Intelligence.'" [Discussion of four main points in the theory of knowledge outlined in the Prolegomena and Annotations of Fraser's edition of Locke's *Essay*. Concludes, as against Fraser, that '*if* human reason has attained to any knowledge of reality at all, it is impossible to set any limit to its possibilities.'] **H. Nichols.** 'The Motor Power of Ideas.' [Critique of the Study published from the Harvard Psychological Laboratory under the same title in the *Psych. Rev.*] **H. M. Stanley.** 'On the Elench of the Liar.' Reviews of Books. Summaries of Articles. Notices of New Books. Notes. (**D. Irons.** 'Criticisms of Mr Bradley's *Appearance and Reality*.') Vol. IV., No. 3. **J. G. Schurman.** 'Agnosticism.' [Agnosticism is a persistent factor in human thought. But it has only two arguments. (1) Knowledge is inadequate to the apprehension of God. But the knower is not a waxen tablet, but a self-conscious spirit: knowing is not the reception of impressions from without, but creative activity at home: and knowledge is not an aggregate of miscellaneous materials in a storehouse called mind, but the unfolding of a living intelligence, always identical with itself. (2) Or the nature of God transcends the reach of knowledge. This is really the same argument in its reverse form; and we can meet it in the same way. The infinite does not exclude or negate the finite, but takes it up into itself, and so gives it its truest being.—Reasons for the present prominence of agnosticism: outlook for the future.] **E. Albee.** 'The Ethical System of Richard Cumberland, I.' [A thoroughly careful and exhaustive piece of work.] **D. Irons.** 'Descartes and Modern Theories of Emotion.' [Analysis of the *Passions de l'âme*, and comparison of Descartes' attitude with the James-Lange Theory of Emotion.] Discussions. **W. W. Carlile.** 'The Consciousness of Moral Obligation.' [Critique of Schurman's paper of the same title, in the Review of Nov., 1894. The ought-feeling cannot be regarded as an inexplicable and unanalysable datum of our intelligence.] **A. Alexander.** 'Professor Ormond's "Basal Concepts in Philosophy".' Reviews of Books. [J. Seth on Balfour's "Foundations of Belief."] Summaries of articles. Notices of New Books. Notes. [M. Washburn: 'The Inadequacy of Natural Selection.']

The Psychological Review. Vol. II., No. 2. **W. James.** 'The Knowing of Things together.' [The problem of the synthetic unity of consciousness is that of knowing things together. Knowing is conceptual (external relation between mind and remote objects), intuitive (identity of mental content and object), and presence in absence or knowing together (relation between the parts of a mental content itself). The condition of the latter is an additional inner event. This has been described physiologically, psychologically, spiritually and transcendentally. The author criticises all views, adopting none. He ends by readmitting the metaphysical view into psychological text-books, thus abandoning the attempt at exclusion made in the *Principles*. 'Contents' have parts, because in intuitive knowledge contents and objects are identical; and psychology will do better to speak of 'contents' as complex unities.] Contributions from the Psychological Laboratory of Columbia College. (III) 'Experiments on Dermal Sensations,' by **H. Griffing.** 'The After Image Threshold,' by **S. I. Franz.** [Measurement of the smallest amount of light which will produce an after image. A relation is obtained between time, intensity and area; which, however, is to be tested by further experiments.] **C. L. Franklin.** 'Normal Defect of Vision in the Fovea.' [An admirably scientific account of the conditions of the discovery of the 'normal night-

blindness of the fovea' in Koenig's laboratory, and summary of the new points in Koenig's theory of visual sensation, with discussion of their validity.] Proceedings of the Third Annual Meeting of the American Psychological Association. Discussions: 'The Sensations are not the Emotion,' by **G. M. Stratton.** [Protest against the tendency to assume that the peculiar sensations involved in the emotion are the emotion itself.] 'A Correction,' by **W. J.** [Explanation of calculation of result of hallucination census.] Psychological Literature. Psychological Questioning. Notes. Vol. II., No. 3. **J. Royce.** 'Preliminary Report on imitation.' [Report of the beginnings of an experimental study of certain simple imitative processes. "My interpretation of what I am usually said to perceive outside of my organism, in the external world, is in the case of these imitations conditioned by my setting over against my perceptions a series of motor processes, or of perceived results of motor processes, which in its wholeness contrasts with the other series in the one principal fact that the motor processes, the imitative deeds or their results, appear to me relatively controllable, plastic, reproducible at will, while otherwise the two series are largely similar." This thesis is interestingly and clearly worked out, and a brief account and analysis of rhythm-experiments given.] Studies from the Princeton Laboratory: (1) **J. M. Baldwin** and **W. J. Shaw.** 'Memory for Square-Size.' [Preliminary work. Methods: selection from variety, identification, reproduction.] (2) **H. C. Warren** and **W. J. Shaw.** 'Further Experiments on Memory for Square-Size.' [The memory image tends to grow larger as the time interval increases. Explanation in terms of Weber's law.] (3) **J. M. Baldwin.** 'The Effect of Size-Contrast upon Judgments of Position in the Retinal Field.' [Tendency of error: its relation to the magnitude of the squares: to their arrangement, etc. Methods of judgment: new apparatus.] (4) **J. M. Baldwin** and **W. J. Shaw.** 'Types of Reaction.' Substitution of 'type' reactions for the sensorial and muscular forms.] (5) **H. C. Warren.** 'Sensations of Rotation.' [The organ for the sense of rotation is the same with that for progressive movement, and is probably the semicircular canals.] Shorter Contributions: **R. W. Wood.** 'The Haunted Swing Illusion.' [Description of an illusion of swinging, where the chamber in which the swing is suspended moves, but the swing itself is practically at rest.] **H. R. Marshall.** 'Heat Sensations in the Teeth.' Discussions: **D. Irons.** 'Recent Developments in the Theory of Emotion.' [Critique of Dewey's articles in the Review.] **S. H. Hodgson.** 'A Reply.' [Answer to Fullerton's criticism of the writer's 'The Conception of Infinity.'] **H. Muensterberg.** 'A Notice.' [Takes responsibility for the work criticised by Nichols in the Phil. Rev. for March.] Psychological Literature. New Books. Notes.

The Psychological Index, No. 1. Index for 1894: issued March, 1895. [It is of great convenience to psychologists to have the literature so promptly put together as has been done here by Messrs. H. Warren and L. Farrand, even though the haste of preparation must almost unavoidably lead to slips of detail. The Index contains 1312 titles.]

The Psych. Review: Monograph Supplement. No. 1: Feb., 1895. [Dr Griffing's monograph on Sensations from Pressure and Impact is noticed elsewhere.]

The American Journal of Psychology, Vol. VI., No. 4. **G. W. A. Luckey.** 'Comparative observations on the Indirect Colour Range of Children, Adults, and Adults trained in Colour.' [Children cannot see colours so far in indirect vision as adults: but show a greater proportional range for black and white than for colour. Difference of sex has no

influence upon colour range. Colour training does not increase the colour range (except, perhaps, for red), but manifests itself in a greater variety of shades and tints to the colours as seen in indirect vision, and less accuracy in naming the fundamental colours by indirect vision.] Minor Studies from the Laboratory of Cornell University: (6) **E. B. Titchener.** 'Taste-dreams.' [Evidence of the occurrence of these dreams.] (7) **R. Watanabe.** 'On the Quantitative Determination of an Optical Illusion.' [In presence of the dotted line and point distance illusion, the illusion of overestimation of the upper half of the field of vision may disappear.] (8) **C. S. Parrish.** 'The Cutaneous Estimation of Open and Filled Space.' [Reversal of the familiar optical illusion.] **C. F. Hodge** and **H. A. Aikins.** 'The Daily Life of a Protozoan; a Study in Comparative Psychophysiology.' ["The universe must consist for a *Vorticella* of a series of touches, possibly also of tastes and smells; but not to any extent of sights and sounds."] Minor Studies from the Laboratory of Clark University: (8) **C. Miles.** 'A Study of Individual Psychology.' [Questionnaire upon habits of discrimination and memory; method of concentrating the attention and going to sleep; emotions and preferences; recollections of childhood, etc. Many suggestive results: too long and detailed for summary.] (9) **A. H. Daniels.** 'The Memory After-Image and Attention.' [Measurement of the duration of the memory after-image: associative memory ruled out by distraction.] (10) **A. J. Hamlin.** 'On the least observable Interval between Stimuli addressed to Disparate Senses and to Different Organs of the same Sense.' [Careful repetition, with variations, of the Exner experiments, by a different method: observations on the effects of voluntary and spontaneous attention.] (11) **E. C. Stanford.** 'Notes on New Apparatus.' [Binocular Stroboscope; model of the field of regard; pendulum circuit breaker, etc.] **A. F. Chamberlain.** 'On the Words for *Anger* in Certain Languages: a Study in Linguistic Psychology.' **E. C. Stanford.** 'A Laboratory Course in Experimental Psychology, v. The Visual Perception of Space.' [An admirable chapter.] Proceedings of the 3rd Annual Meeting of the American Psychologists' Association. Psychological Literature.

Revue Philosophique. Mars, 1895. **M. Bernès.** 'Sur la méthode de la Sociologie.' [A plea for the distinctive position of sociology as a practical science. The external analysis of the actual conditions and institutions of a society is not in itself sufficient. Account must also be taken of the more or less conscious aspirations or tendencies, which foreshadow the future. This point of view is applied in criticism of Durkheim's definition of a sociological fact, and of his theory of punishment.] **L. Dauriac.** 'La Psychologie du Musicien.—IV. De l'Intelligence musicale et de ses conditions objectives.' [It is impossible to define musical intelligence as if it consisted in discovering the sentiment which a piece of music expresses, or which it pretends to describe. It consists in synthetising elements of sound, so as to perceive their coherence as parts of a whole.] **L. Dugas.** 'Recherches expérimentales sur les différents types d'images.' [The point mainly emphasised is the differences in relevancy, distinctness, and accuracy, between the imagery of different persons.] Analyses, etc. Avril, 1895. **J. Delbœuf.** 'L'ancienne et les nouvelles géométries.—IV. Les axiomes et postulats de la géométrie de l'espace homogène.' [Contains a systematic series of definitions, postulates, and axioms.] **M. Bernès.** 'Sur la méthode de la sociologie' (Fin). [Criticises M. Durkheim's views with regard to (1) the rules of sociological observation, (2) the distinction between the normal and the pathological, (3) classification of social types, (4) conditions of the explanation of sociological facts, (5) the canons of proof in sociology. According to M. Bernès Durkheim's point of view is

too external and mechanical. In the praiseworthy attempt to make sociology independent of individual psychology, he has failed to do justice to those immanent tendencies operative in social development which can only be understood when we consider the end to which they are directed.] **L. Dauriac.** 'Études sur la psychologie du musicien.' [Contains many interesting observations; the main point urged is the intimate union of memory and constructive imagination even in those who are without musical culture.] Revue Générale: **Dr Ph. Chaslin.** 'Travaux récents sur la dégénérescence et l'hérédité.' Analyses, &c.

Revue de Métaphysique et de Morale. No. 3. Mai, 1895. **E. Boutroux.** 'La Philosophie de Charles Secrétan.' [An account of Secrétan's various works, which are characterised by the wish to establish Christianity, with the aid of Rational Theology, against Scepticism, Positivism, Materialism. Secrétan was a 'a free thinker within the limits of religion,' who did much to introduce German philosophy into France. His leading ideas were the freedom of the individual, the solidarity of mankind, and the conciliation of both in a religion of love.] **C. Riquier.** 'Des Axiomes Mathématiques.' [Proposes to examine and determine the view which a mathematician ought to take of Euclid's Common Notions 1—7, considered as axioms; and concludes that the words 'equality' and 'inequality' in these axioms exhibit themselves when analysed as synonymous respectively with the words 'identity' and 'non-identity.' Thus Axiom I:—'magnitudes equal to the one and the same magnitude are equal to one another' may be formulated:—'numbers identical with one and the same number are identical with one another.' The other axioms are treated similarly.] **Ch. Dumont.** 'De la Ressemblance et de la Contiguité dans l'Association des Idées.' [Shows that association by resemblance is not reducible to association by contiguity, but rather that the latter is reducible to the former. Indeed, association of *ideas* by contiguity is an improper expression. Contiguity is properly a relation not between *ideas*, but between *nerve-elements*. Hence this antithesis between these two sorts of association rests on a mistake. On the other hand, association by resemblance between ideas cannot be explained by reduction to contiguity between correlated nerve-elements. Dumont, differing both from the Spiritualists, who regard Reason as a separate faculty, and from the Mechanists, who reduce all the faculties of the soul to nervous shocks variously excited and grouped, tries to prove that Reason is *immanent* in spontaneous consciousness, and that Body cannot explain Mind. A paper which deserves careful reading, though the author seems to pass illegitimately from empirical psychology into an ultra-empirical theory of Mind.] Études Critiques &c. &c.

Philosophische Studien. Bd. XI., Heft 1. **C. Cranz.** 'Ueber den Unendlichkeitsbegriff in der Mathematik und Naturwissenschaft.' [The mathematical infinite has only a formal significance, as a sort of useful short-hand. All speculations which apply the concept to religion, ethics, cosmology or metaphysic are therefore objectless. In natural science, what is treated by the mathematics of the infinite is a reality,—the negligibly small.] **F. Kiesow.** 'Versuche mit Mosso's Sphygmomanometer über die durch psychische Erregungen hervorgerufenen Veränderungen des Blutdrucks beim Menschen.' [Description and uses of the apparatus. The changes in blood-pressure are simply the effects of emotions and the affective tone of sensations, not of purely intellectual activity or of sensations as such.] **P. Mentz.** 'Die Wirkung akustischer Sinnesreize auf Puls und Athmung. I.' [Simple noise, simple tone, clang; intensive

variation ; qualitative variation ; series of sounds ; tempo ; accent.] **J. J. van Biervliet.** 'Ueber den Einfluss der Geschwindigkeit des Pulses auf die Zeitdauer der Reactionszeit bei Licht- und Tasteindrücken.' [Time decreases with increase of pulse rapidity.] **F. Kiesow.** 'Untersuchungen über Temperaturempfindungen. (I)' [The great majority of cold spots are sensitive to heat.]

Zeits. f. Psych. u. Physiol. d. Sinnesorgane. Bd. VIII., Heft 5. **Th. Lipps.** 'Zur Lehre von den Gefühlen, insbesondere den ästhetischen Elementargefühlen. I.' [Sharp critique of Wundt's theory of the elementary æsthetic feelings, visual and musical.] **S. Landmann.** 'Das Lasèguesche Symptomenkomplex ; eine psychologische Studie.' [The symptoms—inability to move on the anæsthetic side without help of vision, continuation of movement once begun without visual aid, replacement of visual perception by visual idea or tactual sensation—are explained by the theory of human movement set forth in the author's *Die Mehrheit geistiger Persönlichkeiten in Einem Individuum.*] **A. Koenig.** 'Ueber die Anzahl der unterscheidbaren Spektralfarben und Helligkeitsstufen.' [In normal vision, about 160 colour-tones are discriminable within the spectrum, and about 660 brightness degrees from limen to terminus.] Litteraturbericht. Heft 6. **E. Raehlmann.** 'Ueber die Rückwirkung der Gesichtsempfindungen auf das physische und das psychische Leben. Eine ophthalmologisch-psychologische Betrachtung nebst Erfahrungen an Schwachsichtigen und Blinden.' [Many interesting observations. E.g., old associative connections, which had been built up in childhood between optical impressions and the motor speech-centre, revived with restoration of sight after nine years' blindness and deafness, and aided in the recovery of speech.] **S. Landmann.** 'Ueber die Beziehung der Atmung zur psychischen Thätigkeit.' [There is a direct connection between respiratory processes and certain mental phenomena. Voluntary deep and regular breathing induces sleep, and arrests neuralgia at a constant rate of intermission : *i.e.*, it has anæsthetic effects, brief and local, and long continued and general.] Litteraturbericht.

Zeitschrift für Philosophie und philosophische Kritik. Bd. CVI., Heft 1. **Van der Wyck.** 'C. W. Opzoomer.' [Contains a sympathetic account of the life-work of Professor Opzoomer, who began as 'philosopher of the Absolute' but became afterwards an empiricist—not, however, of the English school. He held that the springs of Cognition are :—Sense-perception, and Feeling (*a*) of Pleasure and Pain, (*b*) of Beauty, (*c*) of morality, (*d*) of Religion. Opzoomer did good service to the spiritual atmosphere of Holland in 'counterworking the fantastic atheism of Multatuli and Van Vloten.'—A paper in which occurs some apparently erroneous criticism of Kant's Philosophy.] **Von Hartmann.** 'Die Wertbegriff und der Lustwert.' [The Concept of Worth depends on the conception of an end. Standards of worth differ as the ends differ. All particular ends are subordinate to an Absolute End, yet among themselves form a hierarchy or system, regulated according to an ascending scale of worth. There must be objective ends, else there could be no objective worth. The order of the world is teleological, and those who reject objective teleology must be content with subjective ends and subjective standards of worth. If there be no 'world-end' the individual person has no worth, and objective morality no existence. The difficulty is to bring subjective ends into harmony with the objective in practice. Pleasure and pain are not to be estimated 'eudæmonologically,' but teleologically—*i.e.* their worth lies, not in producing happiness, but in their relation to culture and morality.

Mankind at first, both as individuals and collectively, act from promptings which have no reference to the pleasure to be obtained by the action; at a second stage, with a view to the attainment of this pleasure; finally (when reflective morality is developed) with a subordination of self-will to objective ends. Were pleasure and happiness the standards of worth, life were indeed an illusion and a mockery: but they are not so. And when the second stage has been passed, and the teleological view of life is accepted for practice, the illusion of happiness-seeking is overcome, but without any real loss even of happiness itself. For pleasures may now be pursued from the teleological standpoint. Von Hartmann once more insists that he does not regard pleasure as itself illusory, though resulting often from illusions. The pleasure arising from illusion is as real as any other—while it lasts.] **P. Van Lind.** 'I. Kant und A. von Humboldt.' [A vindication of Kant and a historical correction.] **Dr Walter Schmidt.** 'Zur Würdigung der philosophischen Stellung Bacons von Verulam.' [The germ of good in Bacon is that he directs men's minds to the study of nature. It was impossible for him to fully develop the principles according to which this study should be conducted. For Inductive Logic presupposes physical science as an accomplished fact, and such science was then only beginning.] Recensionen &c. &c.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE. XIX. Jahrgang, Heft II. **R. Avenarius.** 'Bemerkungen zum Begriff des Gegenstandes der Psychologie' (Artikel IV. Schluss). [This series of Articles is worth reading; but the peculiar terminology and symbolism of the author are so essential to a due understanding of his meaning, that it is hopeless to attempt a brief analysis.] **J. Petzoldt.** 'Das Gesetz der Eindeutigkeit.' [The conception of causality is discarded as obsolete; as against Wundt it is maintained that physical equations always express relations of simultaneity and never of succession. Every fact or process is fully determined by its conditions in one fixed way to the exclusion of all others. This law is subjectively necessary as a condition of our psychical existence; since the possibility of Avenarius' vital series depends on it. Criticism of Mach's doctrine of the partial indeterminateness of nature. Psychical events are not completely determined, unless we take into account their bodily concomitants. None the less the clue to psychical laws must first be sought in the analysis of psychical phenomena.] **J. Goldfriedrich.** 'Ueber die Realität des Zweckbegriffs.' [The only reality which end or purpose possesses is found at that plane of psychical life in which action is determined by motive. But this does not interfere with the complete determination of all material process by mechanical conditions. Final causes are simply co-ordinated with mechanical causes, in the way of psycho-physical parallels. The conception of purpose in nature is an illusion, due to our regarding the whole from the point of view of the part.] Anzeigen &c.

PHILOSOPHISCHES JAHRBUCH, Band VIII., Heft 2. **Von Hertling.** 'Ueber Ziel und Methode der Rechtsphilosophie.' [There is in Germany no philosophy of law. The new school, strictly positive and historical, has destroyed the old one, without setting up another. Merkel and Bergbohm are the adherents of absolute empiricism. This, it is argued, shakes the very basis of any distinction, between right and wrong: chiefly because the confirmation of any hypothesis is based on the assumption that *truth alone can follow from truth;* if this assumption were based upon experience, it might some day or other become untrue, and so it might be doubted even now. Also, because, if we base the principle of contradiction upon experience it is no longer the standard by which experience is to be judged.

The *ought* becomes merely a consequence of the *is*. (To be continued.)] **Schanz.** 'Der Parsismus.' [The writer, after enumerating the sources of his paper, proceeds to give a detailed account of the religion of the Parsees. The most striking part is where he denies that Zoroaster admitted one supreme deity from whom both Ormuz and Ahriman proceeded. That idea sprang from a mistake of Anquetil. Zervan Akarana, the supreme deity, is unknown to the Avesta. A passage of the Yasna (30, 3), is said by the commentator Dinkart to have been interpolated by the demon Aresh, because it seems to point to something like the doctrine of Zervan. Zoroaster decidedly admits dualism. Yet the other doctrine, which prevailed later, has a metaphysical foundation in his positing an eternal space and time principle, which is infinite; whereas Ormuz is limited by Ahriman. (To be concluded.)] **Reitz.** 'Die Aristotelische Materialursache.' [As matter is by itself a pure potentiality, it cannot give itself form or reality, but requires an efficient cause, which by its action gives it what it lacks, a like cause producing a like effect; so that when we see the same efficient cause giving rise to different phenomena, the difference is to be ascribed to matter. The action being directed towards an end, we have the final cause, of which the realization depends on the ability of matter to attain it. Matter may either contribute towards this end, or deviate to produce accidental forms, or even positively hinder its attainment. It then becomes the source of imperfection. Aristotle does not all along hold fast his conception of a pure potentiality. Sometimes he considers matter as merely possible, sometimes as actually realized, and as such, it is no longer absolutely undetermined. Sometimes it is purely passive, the mere substratum of its form; sometimes the principle of individuation, and actively contributing to the properties of the substance. (To be concluded.)] **Gutberlet.** 'Die Wirthschaftspolitik des Vater Unser.' [This article reviews a book by Ruhland which finds the answer to the greatest of social questions in the prayer for *daily bread*. Abundance of all that each person *needs*, both for body and soul, is what should be the aim of society; whatever is superfluous is not rightly ours. Present theories of political economy destroy the middle class, consisting of men neither poor nor rich, whereas the happiest and securest nation is that in which it is most numerous.]

Archiv für systematische Philosophie. Band I. Heft 2. **B. Erdmann.** 'Zur Theorie der Beobachtung (II).' **E. Kühnemann.** 'Analytisch und Synthetisch.' **H. Petrini.** 'Kritische Studien über die grundlegenden Principien der Mechanik.' **F. Tönnies.** 'Historismus und Rationalismus (I).' *Jahresbericht* über die Erscheinungen auf dem Gebiete der systematischen Philosophie. Zeitschriften, etc.

Voprosi Philosophii i Psychologii. January, 1895. **B. N. Tshitsherin.** 'On Space and Time.' [Time is an attribute of the Absolute Subject-Object, the eternal force which includes and governs all particular actions; it is therefore an attribute of the Eternal Spirit. Absolute Space is an attribute of absolute intelligence; as an objective principle, it is a manifestation of the Absolute in the objective world. Time and Space are the links which unite the Absolute and the Relative, determining only formal relations; real relations are determined by the mental categories of substance and quality, cause and effect, end and means, action and law.] **W. A. Goltseff.** 'On Samuel Puffendorf.' [This article is a very condensed summary of Puffendorf's work "Natural and International Law," preceded by a short biographical notice.] **W. S. Solowieff.** 'The ascetic factor in morality.' [The moral feeling of shame includes a negative relation

between humanity and mere animality, which is raised by reason to the rank of an ascetic principle. The writer examines the part played by ascetism in the religions of the East, and concludes that evil has its source in the material side of man. Our animal life should be regulated by our spiritual life. The Spirit, by the feeling of shame, contradicts the tendencies of the flesh. The problem of Ethics is how to control these tendencies and render the spirit independent of matter. The struggle is not with the animal functions, but with the passions of the mind. A true Ascete strives against the flesh, not in order to increase the energy of the soul, as such, but in order to direct that energy towards that which is good. Ascetism, however, is worthless, unless its principles act together with those of Altruism.] **P. D. Boborykin.** 'On the nature of the Beautiful.' [The writer, after having refuted several partial definitions of beauty, affirms that the source of beauty is the idea of life. Beauty is a certain phase of life, in which there springs forth a revelation of higher forms of existence. Its sphere is that side of our mental life in which our sensations, our moral principles, and in short every element of material and intellectual life, are transformed into an emotional whole, which appeals to the element of individuality within us.] **A. A. Tokarski.** 'The origin and evolution of moral feelings.' [The ideas of good or evil result from the impressions of the external world, and their action on man. Pleasant feelings produce satisfaction, from which spring æsthetic, moral and religious emotions. Moral feelings are tendencies towards the increase and bettering of life on the earth; or (to include the negative feelings, such as sympathy, pity, etc.) towards the diminution of suffering. Egotism is directly contrary to morality. So is the feeling of hatred; which, however, can never be quite done away with. So long as a limit is imposed to the supply of what is necessary to human life—material or intellectual—that feeling will come to the surface.] March, 1895. **N. J. Grote.** 'The bases of moral life and activity.' [The foundations of morality lying within man's own mind, which is the principal and the most important of all? It is the Will of the Universe in the spiritual life; the instinct of self-preservation of the Universe in the interest of a spiritual and higher life. That Will is (1) *favourable* to the higher life, watching over its preservation in the world; (2) *hostile* to the individual will, to egotism and the animal instinct of self-preservation; (3) tending towards indefinite progress in the real and ideal perfection of what it produces; (4) and directed chiefly to the creation and amelioration of ideal life in the world.—Thus the dilemma, Duty or Happiness? ought to be answered in the sense of Duty.] **P. A. Kalenow.** 'Life, as a moral conflict.' [Pleasure, happiness, and duty are the three motives which act on the human will. There is a moral conflict between egotism and duty, as there is a physical struggle between reason and passion. The motive of conscious as distinguished from instinctive acts is the idea of the Kosmos. Duty consists not only in the contemplation of the Kosmos evolving itself, but also in an active share in its evolution. From instinctive the conflict becomes conscious, passing through the phases of race-preservation, morality, and religion. Why should we sacrifice our personal good to that of our kind? This question is answered by religion, which is composed of the dogma of God's existence, of free will, and of responsibility. The foundations of faith are irrational: thence the conflict between the instinct of personal interest and those of race-preservation and of faith.] **Prince Trubeckij.** 'Ivantsow-Platonow's scientific work.' **M. S. Rorelin.** 'Ivantsow-Platonow and historical science.' **M. I. Karinskij.** 'An answer to an article on Kant.' (To be concluded.)

*Cambridge: Printed at the University Press.*

New Series. No. 16.] [October, 1895.

# MIND

## A QUARTERLY REVIEW

OF

## PSYCHOLOGY AND PHILOSOPHY.

### I.—NOTES ON THE THEORY OF VALUE.

By Professor Mackenzie.

The conception of Value has played an increasingly prominent part in recent speculation, both in Ethics and in Economics. Indeed there has been an increasing tendency to make this conception the fundamental one in all the sciences that deal with ends. Even in the science of Education the discussion of values has come to be regarded as one of the most important parts of the study. For the prominence thus given to the conception of Value, at least in departments other than that of Economics, Herbart is probably responsible to a greater extent than any other single individual; but the interest in the subject has been by no means confined to his disciples. In Economics Jevons did much to bring out the fundamental importance of the idea of Value. It has since been emphasized by such writers as Menger, Wieser, Böhm-Bawerk, &c., and it plays a prominent part in the writings of Wagner, Marshall, and many others. The wider bearings of the idea of Value were developed to a considerable extent by Lotze, and quite recently attention was drawn to them in this Journal in an interesting article by Professor Alexander[1]. I am not aware, however, that the whole subject has ever been subjected to so searching an examination as it has recently received from two Austrian writers, Alexius Meinong and Christian Ehrenfels; and

[1] New Series, Vol. I., No. 1.

it is chiefly with the view of calling attention to their discussions that the present article is written[1].

Ehrenfels, as I understand, must to a considerable extent be regarded as a disciple of Meinong, though he has certainly worked out his ideas in an independent and highly original way. Meinong himself has been to some extent influenced by the teaching of the psychologist Brentano[2]; and that both he and Ehrenfels have been a good deal affected by the elaborate discussions of their economic fellow-countrymen seems indisputable. Their views, however, do not appear to be in any way dependent on an acceptance either of the psychological position of Brentano or of the conclusions of the Austrian economists. A short account of their methods of procedure may serve as a useful introduction to such further remarks as may fall within our present scope; but it must be distinctly understood that the value of what these two writers have put forward is very largely dependent on subtle distinctions and elaborate analyses, of which no adequate account could possibly be given in such an article as this. I can only hope that a brief indication of some of their leading positions may induce some of the readers of *Mind* to make a careful study of the original documents.

The views of Ehrenfels are set forth in five articles which appeared in the *Vierteljahrsschrift für wissenschaftliche Philosophie* for 1893 and 1894, under the title *Werth-theorie und Ethik*. In the first of these articles he indicates the relationship between his views and those of the Austrian economists. He agrees with the latter in holding that there is the most intimate relationship between value and utility, but that, at the same time, value does not vary directly with utility, but is dependent on marginal utility ("Grenznutzen"). In order, however, to bring out the wider bearings of the subject, he finds it necessary to introduce some distinctions which have not been recognised by the economists. Thus he distinguishes between Intrinsic and Instrumental values ("Eigenwerthe" and "Wirkungswerthe"), i.e. between objects valued for their own sakes and those valued as means of producing other valuable objects[3]. He also thinks it necessary to. draw a distinction

[1] There are also some suggestive remarks on the subject of value in Simmel's *Einleitung in die Moralwissenschaft*, which has already been noticed in this Journal.

[2] I judge that Ehrenfels has also been to some extent influenced by Brentano, though he is certainly far from being a disciple. In his article *Ueber Fühlen und Wollen* (pp. 537 *sqq.*) he has some elaborate and penetrating criticisms of Brentano's position.

[3] This distinction is not to be confounded with that commonly drawn by economists between Goods of the First and higher Orders. Economic Goods of the First Order are those that are valued for direct consumption,

between Nutzen and Frommen. When the utility of an object is spoken of, one generally understands that its power of contributing to the happiness of some individual is referred to; and in dealing with economic goods it is seldom necessary to go beyond this. But in dealing with the wider conception of value it is necessary to have some term to express the simple choice-worthiness of an object, without reference to its power of contributing to individual happiness. Ehrenfels considers that the word "Frommen" may be conveniently used in this sense[1]. Hence he is led also to use the term "Grenzfrommen," or marginal advantage. He considers that the economists have tended to confine their attention too exclusively to marginal utility and to goods that have only instrumental value, and that thus their conception of value has not been sufficiently wide[2].

In discussing the relationship between value and utility, Ehrenfels is led to state his view with regard to the connexion between both these and the two psychological elements known as feeling and desire[3] The way in which he relates the idea of value to these is specially important and interesting. He considers (p. 89) that value is more directly connected with

such as food, clothing, &c., which are certainly not as a rule valued for their own sakes. On the whole it seems correct to say that *all* economic Goods are only of the nature of Instrumental Values. A work of art, on the other hand, has intrinsic value for the lover of the beautiful; and so has a scientific theory for the lover of truth. (*Cf.* Ehrenfels, *loc. cit.*, p. 90.)

[1] This distinction is rejected by Meinong (*Psychologisch-ethische Untersuchungen zur Werth-theorie*, p. 13, note) on the ground that it is less in accordance with the usage of language than the extension of the term Utility to cover both meanings. Certainly it would be difficult to find any corresponding term in English to express the distinction intended by Ehrenfels; and indeed it seems to involve an inconvenient and misleading limitation in the use of the term Utility.

[2] Of course the usage of the economists might be defended on the ground that it is only with these forms of value that they are specially concerned. But as Meinong points out (*op. cit.*, p. 5, note), several economists have claimed that their discussions exhaust the whole subject of value. Thus Wieser says (*Natural Value*, English Translation, Preface, p. xxxv) "I have attempted to exhaust the entire sphere of the phenomena of value without any exception." A similar claim appears to be implied in some of the statements of Menger.

[3] Gefühl and Begehrung. It is important to note that Ehrenfels uses the former term in the sense that has been rendered familiar to English readers by Dr Ward, as including nothing but the simple fact of being pleased and pained; while he understands the term Begehrung in a wide sense, as including the whole of the active side of mind. Thus when he speaks of desire, we must understand him to include will and also some of those elements in mind which are commonly described as emotion (love and hate, and the like). See his article *Ueber Fühlen und Wollen*, pp. 531–532. I believe this use of the term Begehrung to be somewhat inconvenient and confusing.

desire than with feeling. In fact he even says roundly—"This thing is valuable for me is as much as to say: This thing is an object of my desire. *Value is the relation of a thing to a human desire directed towards it—a relation which receives from language an erroneous objectification.*" The force of this definition is, however, a good deal modified by the subsequent remark (p. 209) that "by desire is to be understood not exclusively an actual desire, but also a possible desire, or, what is the same thing, a *tendency to desire.*" This view of Ehrenfels does not entirely meet with Meinong's approval[1]; and certainly it seems open to serious objection. It appears at least, on the face of it, to ignore the importance of Dr Sidgwick's famous distinction between what is *desired* and what is *desirable*[2]. When we value anything we are not simply desiring it but regarding it as desirable. We judge that, from some point of view, it is worthy to be desired. Now it may be said that in all desire there is an implicit judgment of this kind; but it is important at least to remember that the judgment does not always become explicit. The fact that the distinction here involved—like most psychological distinctions—is not one that can be rigidly drawn; that we can hardly desire an object without in some degree judging it to be worthy of desire, and that, on the other hand, our judgments of value are often little more than expressions of the fact that we desire certain objects; this fact, so far from rendering it unimportant to draw the distinction, only emphasizes the necessity of bearing it in mind. Distinctions which break down are generally those that it is most important to draw. In the present case, as it seems to me, the real distinction is not between desire and value but rather between the lower and the higher forms of desire itself. The less developed manifestations of desire, those that approximate most nearly to simple animal appetite, may, without much unfairness, be regarded as merely subjective phenomena. There is practically no objective judgment with regard to the worth of the thing desired. What we have is simply the subjective fact of an agreeable or disagreeable feeling accompanying the presentation of particular objects, together with an impulse directed towards the attainment, removal, or retention of the objects involved. Such desires are very much on the same

[1] *Op. cit.*, p. 15.

[2] Ehrenfels does not appear to be acquainted with the views of Sidgwick on this subject. At least, in his historical sketch of the treatment of it at the end of his article *Ueber Fühlen und Wollen* (pp. 618–634), he makes no reference to Sidgwick. J. S. Mill is also very inadequately dealt with in that sketch, and is, rather curiously, placed after Bain. That there is no reference to Green or Ward is perhaps less surprising.

psychological level as instinctive movements[1]; and just as the latter imply no definite judgment as to the adaptation of means to end, so the former imply no definite judgment of worth. But in the more fully developed forms of desire this is no longer true. The consciousness of the end involved becomes more and more pronounced; and what was at first a mere preference based on feeling becomes in the end a conscious choice based on a judgment of value. Now the real question here, as in so many other cases, is whether the more developed is to be interpreted in terms of the less developed, or *vice versâ*. Ehrenfels's statements suggest the former view, though the modifications subsequently introduced leave it somewhat doubtful whether this was his real intention. On the whole he appears to mean that our irrational feelings and impulses have a priority over our rationally determined ends, and that the worth which we attribute to the latter must in the long run be explained by the presence of the former. Now this view seems to me to be a relic of Hume's doctrine of the subordination of reason to passion[2]. It is no doubt true that our natural impulses present themselves at first as instinctive tendencies, without any appearance of a determination by rational principles; and, when reason does appear, it seems at first as if its practical functions were limited to the calculation of the best means for the realisation of the given ends. It seems as if reason were unable to create any fresh motive, as if it were entirely destitute of propulsive force. "Reason the card, but passion is the gale." But further reflection ought, I think, to convince us that this is not strictly true. Its illusory appearance of truth is due to our tendency to think of each of our desires and impulses as an independent force; instead of recognising that they are elements in a more or less systematic whole, and take their character from the totality within which they stand. Though we say sometimes that a man has "the

[1] *I.e.* they depend rather on simple association than on judgment.

[2] In his article *Ueber Fühlen und Wollen* (pp. 534 *sqq.*) Ehrenfels elaborates what is essentially Hume's view on this point in a highly interesting way. I think, however, that he somewhat confuses the issue by making it turn on the question whether reason can influence the will *without the mediation of feeling*. Even Kant, to whom Ehrenfels is here explicitly referring (as also later, pp. 624–625), did not really mean to deny that reason influences us through the mediation of feeling, but only to affirm (1) that the objective side in this influence has priority over the subjective, and (2) that the kind of feeling involved in this mediation is different in kind from the simple pleasure or pain accompanying the gratification of our natural appetites. He seems to admit, however, that it is a kind of pleasure reached through pain. *Cf.* Caird's *Critical Philosophy of Kant*, Vol. II. pp. 276–277.

obstinacy of a pig," we probably do not quite mean what we say. In reality the pride of a peacock or the anger of a bear is a very different moving force from the passion to which we give a corresponding name in man; and in different men such passions are widely different, in accordance with the character or point of view, i.e. in accordance with the universe in which they are placed, or the appercipient system by which they are brought to unity. If that system or universe be a rational system, its rational character will make itself felt, so to speak, down to the very finger-tips of the organic unity which it dominates. Reason, it may be said, only disposes the content. But the disposal of the content is everything. The content so disposed is quite truly *constituted* by the reason which disposes it; it is made into something which it would not otherwise be. Reason, then, I would urge, at least transforms the desires which enter into the life of a rational being. But it does more even than this. It produces new ones. It creates for us all those desires that depend on a view of life as a systematic whole, and, similarly, of all those that depend on a view of the world as a systematic whole. Now these form a considerable element in the human consciousness. Ehrenfels refers (p. 88) to the Stoics as an instance illustrating the incompetence of reason to create any fresh impulse in life. But what the Stoics and other thinkers of that period illustrate is rather the vanity of throwing aside the concrete content of life and sinking back upon the abstract unity of the individual consciousness. So far as the power of reason is concerned, it might very well be urged that the Stoics did after all succeed in some degree in creating for themselves a fresh interest in life by means of the conception of a life according to reason; and that in this way they may be taken as illustrating rather the power than the impotence of thought. But they illustrate it in a one-sided way, inasmuch as they had not sufficient confidence in the ability of reason to master the objective content of experience, and so rejected the particular desires instead of systematising them.

This leads us to another point. Such considerations as I have now adduced ought, I believe, if fully thought out and appreciated, to convince us that in our practical life reason is not to be regarded as an otiose addition to a collection of particular impulses existing independently of it. But further reflection may lead us to go beyond even this. Instead of regarding the ends which reason determines as being entirely constituted by particular impulses which are independent of reason, we may be led to think that even our particular impulses, as they appear prior to the development of reason, are not without reference to that development. It is, indeed, now

pretty generally recognised that our pains and pleasures are not accidental phenomena, any more than our instinctive movements; but that they are all more or less definitely determined by biological ends, i.e. by ends which are not consciously present to us until they are determined for us by rational reflection. But if this is so, it seems to imply that the ends determined by reason are in a sense prior to our particular desires, rather than *vice versâ*. And indeed this is in effect what Meinong urges in his criticism of Ehrenfels (*op. cit.* p. 15), though I have no reason to suppose that the former writer, any more than the latter, would be prepared to accept the general position that I am here endeavouring to indicate. What I mean to imply is that our particular desires and impulses, like our particular instinctive movements, contain in themselves a kind of natural prolepsis, a kind of anticipation of ends which are not yet consciously present. How this anticipation is possible is not a question that can be here discussed. It is a question that must present itself, in many different forms, to all who are concerned with the genetic treatment of psychological processes. Perhaps it may still be true for us, as it was for Kant, that the "blind" working of the faculties of imagination and of other mental activities that are on the imaginative level, is one of those mysteries of the mental life that have never yet been sufficiently explored; but if there is any truth in the view that such an anticipation is to be recognised, then there is a sense in which value is prior to and explanatory of desire. Even in ordinary life we tend to regard as "unnatural" those instincts and impulses which cannot be justified as having any value for reason; and though the fact that there *are* such "unnatural" tendencies may be held to shew that the growth of our impulses is not entirely dominated by rational principles, yet the fact that they are regarded as abnormal seems to indicate that on the whole even our prerational existence is guided by a reference to those principles of value which reason subsequently discovers. It appears, then, that there is some ground for believing that the idea of value is in reality more fundamental than desire, or, in other words, that the objective side (the reference to an end) in the fully developed phenomenon of desire has a certain priority over the subjective side (the pure element of feeling which accompanies the reference to an end, whether or not the latter be consciously present)[1].

[1] For some further remarks on the way in which the proleptical reference in desire is to be understood, as well as on some other points bearing on this subject, I may perhaps venture to refer here to the Note on Value in my *Introduction to Social Philosophy* (2nd Edition, pp. 266—271).

With reference, next, to the relation between desire and feeling, the view of Ehrenfels is thus summarised[1]. "If in any particular case we are placed before the possibility of desiring either the end *a*, *b*, or *c*, &c., or of desiring nothing at all, then that psychical state always realises itself which brings with it the relatively most favourable condition of feeling (i.e. relatively most pleasure and least pain) for the nearest distinguishable portion of time adjoining. The most unselfish acts of desire are subject to this law. Even one who knowingly offers up his life for another, is happier at the moment when the requisite act of will takes place, or at least less unhappy, than he would have been if he had neglected the performance, i.e. if the requisite act of will had not realised itself in him. The desiring or not desiring of anything always realises the greatest possible state of happiness for the immediately succeeding time, just as water in a vessel that is shaken always finds the lowest positions; but, just as in the case of the water, so in the case of the desire, the result is brought about without any consciousness of the end. The greatest possible pleasure of the immediately succeeding moment sets itself forward of its own accord, through the simple force of our psychical mechanism, as a consequence of the universal law of the greater power which presentations that have a relative tendency to promote happiness possess of preserving themselves; and this happens even when we are not explicitly desiring happiness. Such cases are psychologically considerably the larger number. Not only in the case of those acts of desire which are ethically on a high level, but even in the case of the most commonplace so-called egoistic impulses, such as in the case of the appetite for food and drink, the aim of securing a future condition of feeling is entirely absent. Accordingly we are able to take as our ultimate end not only the promotion of our own happiness but also any other conceivable object, provided that we find in the anticipation of that object a more favourable condition as regards happiness than we should be able to realise without that anticipation."

Ehrenfels remarks (p. 92) that this view has "never yet been controverted." Perhaps we may safely add that it is never likely to be. At any rate, the only criticism that I

[1] The view of Ehrenfels on this point is more fully given in his dissertation "Ueber Fühlen und Wollen." The above statements are his own summary of the general results of this dissertation. The latter is well worth reading for its own sake. I am not sure that it is not even more important than the articles on Value. It is to be found in the *Sitzungsberichte der kaiserl. Academie der Wissenschaften* for 1887 (Wien). It is certainly one of the most thorough discussions of the relation between feeling and desire with which I am acquainted.

should care to make upon it is not one designed to throw doubt upon its truth, but rather upon its importance. I hardly see how any one can dispute that what we desire at any moment is that which at that moment presents itself as the most satisfactory complement of our present condition. Indeed, I can hardly tell what is meant by desiring an object except regarding it as supplying a defect in our present consciousness; and I do not see how we can think of the supplying of such a defect without a feeling of gratification in the thought of it. On this point it seems to me that J. S. Mill was perfectly right. To desire a thing and to think of it as pleasant, in the sense indicated by Ehrenfels, are but two aspects of a single psychological fact[1]. So far, therefore, from seeking to controvert his position, I would only suggest a doubt whether it is not tautological. Even a tautology, however, may sometimes serve to emphasize an important truth; and if Ehrenfels's statement were simply intended to bring out the two sides that are always present in desire—what may be called the subjective and the objective side—I should have no objection to it, but should regard it as a useful contribution towards the precise formulation of the relationship between the two sides. But unfortunately Ehrenfels sets forth his view as the statement of a "law," and seems to regard it, not as a tautology[2], but as throwing light on

[1] Of course I am very far from meaning to imply that Ehrenfels has not put the matter in a vastly more satisfactory form than any in which it was ever stated by Mill. I doubt whether it could be put much better than it has been by Ehrenfels, except that the idea of the "next succeeding moment" does not seem to me a very happy one.

[2] The reason why it does not present itself to Ehrenfels as tautological is that he draws a sharp distinction between feeling and desire. He does not simply regard them as two distinguishable aspects in the totality of our mental life, but rather as two entirely different elements. Hence he is led to look for a law of their connexion. He explains (*Ueber Fühlen und Wollen*, p. 561, *etc.*) that feeling may exist without desire, and desire without feeling. They are not necessarily implied in one another. There is of course some plausibility in such a view, and it cannot be denied that several of Ehrenfels's illustrations are very striking. But I think the plausibility of it arises largely from a failure to hold firmly to the view that feeling means nothing but agreeable or disagreeable consciousness. If we are careful, for instance, not to confound simple disagreeableness with the organic sensation of pain, and at the same time not to confound either feeling or desire with emotion, and not to confound desire with mere animal appetite or impulse, then I think we shall be able to recognise that there is always an element of feeling in desire, and that that element is the inevitable counterpart of the objective side of desire, and not something requiring to be connected with desire by means of a law. The absence of any sufficient account of emotion seems to me to be one of the weakest points in Ehrenfels's psychology (as also, I think, in Brentano's). Emotion tends to be confounded with feeling on the one hand and with desire on the other, and this is a fruitful source of confusion.

the machinery by which desire is moved. So regarded, I cannot but think that it is most misleading. Here again, in fact, we are brought back to the question whether the complex phenomenon of desire is to be accounted for by directing attention exclusively upon its subjective aspect; and again I must emphasize my conviction that it is not. The work of Butler and Hutcheson seems to me, on the whole, to have settled this point. Desire is not to be regarded as primarily directed, even unconsciously, towards the pleasure of its own satisfaction; but on the contrary the fact that we get pleasure in this or that particular way is due to the fact that we have wants directed in this or that direction—wants which "terminate in their objects." How it comes that we have wants directed in this or that direction is then a further question; and I would urge that the answer to this question is to be looked for rather from biology than from hedonistic psychology—if, indeed, in the long run, it can be found anywhere short of metaphysics.

Another interesting question is raised by Ehrenfels in discussing the possibility of error in attaching value to objects. It seems clear that there can be no error where there is nothing of the nature of judgment; and accordingly the question how far judgment is involved in the valuing of objects arises at this point. Here the distinction between *Eigenwerthe* and *Wirkungswerthe* does him yeoman's service. It is evident that in the case of *Wirkungswerthe* there is at least an implicit judgment involved—the judgment, namely, that some given object is a means to a desired[1] end. This judgment may be erroneous; and accordingly all instrumental values are hypothetical. It is otherwise in the case of *Eigenwerthe*, i.e. in the case of objects that are valued directly for their own sake. In such cases we do not first apprehend an object and then ascribe value to it as a predicate. The value is rather directly given along with the apprehension of the object to which it is ascribed. Hence in such cases there is not, at least in the first instance, any judgment involved at all, but rather a simple feeling (p. 94). "Here, therefore, one cannot consistently speak of an *estimate of value* [Werthschätzung] (in the sense of a weighing of the value of an object), still less of a *judgment of value* [Werthurtheil], but only of *counting valuable* [Werthhaltung] or simply *valuing* [Werthung]." In such cases, therefore, there is also no possibility of error, since there is no judgment formed. In the case of a true *Eigenwerth* Ehrenfels agrees with Ferishtah:—"Apprehended as a prize, a prize it is." Now in this view I suspect there is an error due to the adoption of the

[1] Or desirable.

attributive theory of judgment. If we suppose the essence of judgment to consist in the attribution of a predicate to a subject previously given, then it is no doubt true that in the direct valuing of an object for its own sake there is no such predication implied. As Mr Bradley would say, the "that" and the "what" are not, in such a case, set over against one another. But if we recognise, as I think we must, that the essence of judgment consists rather in the creation of a world for ourselves by the placing of particular contents within an ideal system, then every case of the valuing of any particular object is, in this sense, a judgment. But, even without entering into a discussion of the question whether the judgment necessarily involves an opposition between the "that" and the "what," I think we may see that there must be some error in the position taken up by Ehrenfels. It is no doubt true that in the case of objects that are directly apprehended as valuable, there is an immediate feeling of satisfaction in the presentation of the object. But is this feeling the same thing as the valuing of the object? Ehrenfels seems (p. 94) to say that it is; and it is on this view that his doctrine turns. Now, far be it from me to deny that all feeling of pleasure may be fairly described as a sense of value. But it is so, as I have urged, only in an anticipatory or proleptical way. It seems an abuse of language to say that in the strict sense, we value anything without reflecting upon it and comparing it with a standard. A man may feel pleasure in many objects which he does not value in the least. It may be said that pleasure is for the merely sentient consciousness what the appreciation of value is for the reflective consciousness; but this is only to say that the feeling of pleasure is an anticipation of the judgment of worth. In short, whether or not we are to maintain that the consciousness of value involves a judgment in the ordinary logical sense (a question to which the answer may depend a good deal on our view of the essential characteristics of the logical judgment), it can hardly be denied at least that the consciousness of value involves judgment in the sense of *judgment upon*. It is one of the normative facts in our psychical life. It involves comparison with a standard, and this surely implies judgment. Here, in fact, as at previous points, it seems to me that Ehrenfels is emphasizing the subjective element in desire at the expense of the objective. Desire involves feeling, but it also involves the apprehension of an object: value involves feeling, but it also involves reflection upon a standard of comparison or upon the idea of an end.

The only other point of much importance dealt with in this first article of Ehrenfels's series is the idea of negative value, with

which it is impossible to deal here. I regret that the number of interesting points contained in the first article has prevented me from dealing also in a similar way with the points contained in the other four. I believe, however, that most of the points contained in the other articles are of a less controversial character. Their interest seems to me to be mainly psychological. They throw light on the movements of the human mind in its estimation of the value of various kinds of objects rather than on the fundamental idea of value itself. It is natural that Ehrenfels, with that strongly subjective tendency on which I have already commented, should be chiefly attracted by this side of the subject[1]. I have perhaps already sufficiently indicated how unsatisfactory I believe this manner of treatment to be. But this feeling of dissatisfaction does not at all prevent me from appreciating the high *Wirkungswerth* and even *Eigenwerth* of much of what Ehrenfels has written. His treatise seems to me to be a singularly original, subtle, and carefully worked out contribution to an important subject.

The views of Meinong, as I have already indicated, are to be found in his interesting treatise entitled "Psychologisch-ethische Untersuchungen zur Werththeorie." This is on the whole a more elaborate work than that of Ehrenfels, aiming more distinctly at systematic completeness, and in several important respects it appears to me to carry the discussion of the subject a stage deeper than Ehrenfels has been able to go. The general outlines of Meinong's mode of treatment have been already indicated in the short notice of his book which has appeared in *Mind*[2]. The points discussed in it are much too numerous and intricate to be dealt with in any detail in such an article as this. Perhaps also the fact that it has appeared in the form of a book, and not, like the discussions of Ehrenfels, merely as a series of articles in a Journal, makes it more accessible to those concerned, and so renders it less needful to give an account of his position. At any rate, all that I can do here is to notice one or two of the leading points which seem to me specially interesting

[1] I may note here that a similarly subjective vein seems to me to be characteristic of much of the work of the Austrian school of economists. With all their references to what they call "objective value" they seldom appear to get beyond the consideration of subjective appreciations. In this respect the strongly objective treatment of such a writer as Wagner seems to me to have a marked superiority. I believe that in the more general treatment of value also, as distinguished from the purely economic treatment, an objective point of view is of great importance.

[2] For April, 1895. The short account there given is, however, somewhat misleading, inasmuch as it may be interpreted as implying a closer relationship between Brentano, Meinong, Ehrenfels, and the Austrian economists than is actually to be found.

and important. A few other points have already been incidentally touched upon in dealing with the views of Ehrenfels.

There can be no doubt that one of the most interesting and fundamental points in the work of Meinong is his discussion of the nature of the judgment involved in the estimate of value. This seems to be the point to which Meinong himself attaches the greatest importance, and it is perhaps also the point at which his divergence from the views of Ehrenfels is most marked. Meinong fully recognises that in all appreciation of value an element of judgment is involved; but he combines this recognition with the doctrine that the appreciation itself is of the nature of feeling rather than of judgment. He is thus led to maintain the existence of a peculiar class of feelings which he terms Urtheilsgefühle, of which the appreciation of value is one. These judicial feelings (if we may use such an expression) are to be distinguished from presentational feelings (Vorstellungsgefühle), and possibly also from appetitive feelings (Begehrensgefühle) and some others. The point which Meinong wishes to emphasize by these distinctions is, I think, a sound and valuable one, viz. that feeling is not an isolated element in our mental life, existing independently of the content with which it is connected, but rather that it has its character determined, at every stage in its development, by the nature of its content. "A feeling without content," as he says (p. 34), "is not less absurd than a presentation without content." This seems to me perfectly correct. There is too great a tendency among modern psychologists to represent feeling as a thing apart—a sort of *Ding an sich*[1]—, and to make it appear as if it made no difference to the nature of the feeling whether it appeared at the sensational, at the perceptional, or at the conceptional level in our mental development. I believe there could be no more fatal error. The element of feeling seems, more than any other element in our inner experience, to have a direct reference to the unity of our conscious life; and, if this is so, it can hardly fail to take its tone and colour from the nature of that unity. The feeling which accompanies that elementary undifferentiated unity which is commonly known as coenaesthesis can hardly be the same kind of feeling as that which accompanies the definite presentation of an object; and the latter again must surely be widely different from the feeling that arises in connexion with the unity of self-consciousness, by which objects are not merely apprehended but thought. That in every case the feeling of pleasure is a certain sense of the harmony of the content with the form of unity to which it is

[1] Some recent psychologists have actually described it in this way.

brought, and that the feeling of pain is a corresponding sense of disharmony, may readily enough be granted. But to suppose that the sense of harmony which accompanies the mere flawless continuity of the "this-mine" feels to us the same as would the harmony, say, of a beatific vision, appears to me to be little short of an absurdity. What feeling is for us seems clearly to depend on the nature of the content within which it emerges. So far, then, I find myself entirely in agreement with Meinong, if I have rightly grasped his meaning. When, however, he goes on to suggest that, besides recognising a distinction between the feeling which accompanies presentation and that which accompanies judgment, we ought also to recognise a distinct kind of feeling which accompanies (or, as he is even willing to say, which is caused by) desire, I cannot but suspect that he is on the wrong track. He is misled, I imagine, by the fact that he has approached the study of psychology rather according to the analytical than according to the genetical method. He is thus led to look for a feeling corresponding to every recognisable element in the analysis of our psychical life. I believe it would be more fruitful to approach the matter from the point of view of mental evolution, and to look for a different kind of feeling corresponding to every stage in the process of development. Thus, if we recognise that there are three broadly distinguishable stages in our mental development—(1) the stage of undifferentiated sensation, (2) that of the definite presentation of objects, with its ideational accompaniment of memories and images, and (3) that of conceptions and ideals—, then we should naturally expect to find three levels of feeling corresponding to these, which some writers have endeavoured to distinguish by using such terms as pleasure, happiness, and bliss. And if we recognise more stages in the development of our mental life, we should similarly expect to find more stages in the growth of feeling. At each of these levels, again, we might perhaps be able to distinguish receptive and active elements in our consciousness, as well as the element of feeling; and these elements would also present themselves in different forms according to the level at which they appear—the active side for instance developing from the vague promptings of undefined impulses, through definite animal appetites, to the stage of fully-formed desires. Approaching the matter in this way, we should not naturally look for a particular kind of feeling accompanying desire, but only for a particular kind of feeling accompanying the stage at which desire emerges. This point, however, is perhaps not of much importance with reference to Meinong's main contention; and we need not now press it further.

Having thus endeavoured to establish the existence of a

class of Urtheilsgefühle[1], Meinong next goes on to subdivide this class into Wissensgefühle (feelings of knowledge) and Werthgefühle (feelings of value). Here I must confess that I cannot so easily follow him. The distinction which he wishes to draw, if I understand him rightly, is that between the appreciation of a subjective state and the appreciation of the object to which a subjective state is directed, or which forms its content. We may appreciate the simple fact of knowing, apart from the consideration of any value that may be attached to the object known. The desire for knowledge is in part simple curiosity, the mere desire to know for the sake of knowing. Such simple appreciation of knowledge as such is what Meinong appears to mean by Wissensgefühl. A Werthgefühl on the other hand is the appreciation of an object judged to be valuable. In the latter case we have a definite judgment of value: in the former case we have only, as it were, a valuing of judgment. I would urge, however, that we *have* a valuing; and consequently that it is in reality a species of Werthgefühl. The difference to which Meinong appears to be here calling attention is that in one case there is an explicit judgment of worth pronounced upon an object, while in the other case there is no such explicit judgment, but only a feeling of appreciation, similar to the feeling which accompanies a simple presentation (Vorstellungsgefühl). But is it otherwise with the majority of *Eigenwerthe*? The direct appreciation of the beautiful, for example, does not seem to involve any explicit judgment of worth. It is an Urtheilsgefühl only in the sense that it is a feeling of appreciation which belongs to the intellectual level, and which can readily be expanded into a definite judgment. But when we appreciate knowledge as such, is not this also on the intellectual level, and could not this also be expanded into a judgment of value? No doubt, as Meinong urges, the desire of knowledge may be distinguished from the desire of truth. The lover of truth is devoted to an object to which he attaches value, just as is the lover of beauty or goodness or any other valued end. The lover of knowledge as such, on the other hand, i.e., as Meinong puts it, of mere subjective truth, is merely appreciating an intellectual process, without reference to the value of its content. But still he surely is valuing that process. He is, more or less explicitly, saying to himself that it is worth while to know. Apart from this, I am bound to confess that I am somewhat sceptical as to the existence of such an apprecia-

[1] Meinong's insistence on the distinction between Vorstellung and Urtheil may probably be taken as one of the evidences of his connexion with Franz Brentano. Cf. the latter's *Psychologie vom empirischen Standpunkte*, Vol. I. pp. 266 *sqq.*

tion of knowledge in the abstract, knowledge apart from all reference to the truth and importance of its content, as that to which Meinong here seems to refer. The human mind is often apt to be very abstract in its point of view. It leaves out many relevant circumstances, and it is hardly aware that it is leaving them out. And no doubt in the pursuit of knowledge such an abstraction is frequently to be found. We fancy that we simply want to know, and that we care nothing for the importance of the particular content which we are pursuing. A man may even come to care for his own opinions simply because he holds them, until he almost loses sight of the question as to their truth or falsehood. But this is only possible as a kind of side-eddy in the stream of our conscious life; and the fact that it is possible at all seems to be due to that complication of our mental structure, which enables us to pass rapidly from one point of view to another. When we appreciate an opinion that we know to be false, or that we suspect to be false, we at least "make believe" that it is true at the moment at which we appreciate it. We place ourselves, for the moment, at the point of view from which it seems to be a truth; and it is *sub specie veritatis* that we appreciate it. I cannot think, therefore, that, in such a case as this, an implicit judgment of value is entirely absent. However, as Meinong himself seems in the end inclined to withdraw his own distinction, it is perhaps not worth while to deal with it farther. It seems clear at least that it is not a distinction of any great importance. The only reason why I have thought it necessary to direct attention to it at all is that the drawing of this distinction appears to me to bring out a certain defect in Meinong's point of view. He is too prone, I think, to draw minute distinctions, and to "cut things asunder with an axe." He is anxious, for instance, to fasten down the feeling of value to one definite place in our mental life. Such an effort is no doubt praiseworthy; but I suspect that it leads him to some extent to forget the continuity of consciousness. In this particular respect I am disposed to prefer the treatment of Ehrenfels, for whom all feeling is a feeling of value. In a developing organic system the distinctions that have to be drawn can seldom be absolute distinctions. They are rather, as a rule, distinctions between the more and the less explicit. That kind of appreciation of an object which we call valuing it occurs, in a fully developed form, only at the conceptional level in our intellectual life. It is the accompaniment of a process of judgment and of a definite conception of an end. But we ought, I think, to recognise, at the same time, that this kind of appreciation is only the fully developed form of an element which appears at the very lowest stages in our conscious life,

and which at every period in its history grows with its growth and strengthens with its strength. This is a point which the subtle distinctions of Meinong appear to me to a large extent calculated to obscure.

In connexion with this point, Meinong is naturally led to give a good deal of attention to the psychological nature of the process of judgment. Here again the influence of Brentano seems unmistakable (*Psychologie*, Book II., chap. vii.)[1], and I think it is on the whole a good influence. He is led by it to treat the judgment as being essentially rather existential than predicative, *i.e.* as having its fundamental characteristic, not in the attribution of a predicate to a subject, but rather in the attribution of a content to reality. I believe that the working out of this view would throw much light on the nature of the judgment involved in valuing, especially if it were recognised that the reality to which attribution is made must be regarded as an ideal system. The significance of the valuing of an object as consisting in the recognition of the harmony or want of harmony of the object with the ideal system within which it is placed, would thus be made apparent. Meinong, however, does little more than touch on this aspect of the subject, promising a fuller discussion of it in a future treatise. Meanwhile, the distinction which he draws between a "Haupturtheil" and a "Nebenurtheil," and the way in which he connects the idea of value with the former, seem to point in the right direction. I can only hope that, in his further elaboration of this point, he will fully recognise that the essential characteristic of a Haupturtheil lies in its placing of a particular content within an ideal whole.

Another important question which is discussed by Meinong is that with respect to the relationship between the subjective appreciation of value and the objective fact of value itself, *i.e.* the relationship, as he expresses it, between *Werthhaltung* and *Werth*. He is careful to explain that these two things are by no means identical (especially p. 24); and by his insistence on this point he has, I think, corrected the almost pure subjectivism both of Ehrenfels and of the Austrian school of economists[2].

[1] I cannot find any similar evidence of the influence of Brentano on Ehrenfels with regard to this point. Indeed, as I have already indicated, a failure to give sufficient attention to the nature of judgment seems to me to lie at the root of much that is defective in Ehrenfels's general treatment of the subject.

[2] With these economists "objective" is almost a term of reproach. Intrinsic value they seem always to treat as purely subjective. As regards Ehrenfels, his subjectivism is partly corrected by himself, when he adds, as above noticed, "possible" desires to actual ones. But it was reserved for Meinong to bring out the true significance of this (p. 25, Note).

At the same time the subjective side is still for Meinong the more important; and he even concludes this part of the discussion (p. 30) by leaving it problematical whether there is, strictly speaking, anything that can truly be described as objective value. Purely objective value, he insists, would be the same as absolute value; whereas the only value with which we can ever deal, at least from the psychological point of view, is necessarily relative (referring to a particular object on the one hand and a particular subject on the other). In short, while Meinong emphasizes the fact that to have value is not the same thing as to be valued, he is yet equally emphatic in maintaining (p. 29) that to have value must always involve the possibility of being valued by some assignable consciousness; and we are thus precluded from recognising, so long at least as we confine ourselves within the region of ordinary experience (as we do in Psychology), the existence of any strictly objective or absolute value. No doubt this is true. But is any one interested in maintaining the existence of objective value, in the sense of a value which is not a value for some sort of consciousness? I suspect that at this point Meinong betrays the limitations of a thinker who has won his spurs in the field of English empiricism[1], and who has never adequately appreciated the work of the great German idealists. If objective existence means existence for "Bewusstsein überhaupt," or existence for an ideal self, then no doubt it will still be true that such existence does not fall within the domain of the empirical psychologist; but it will naturally be asked why any one writing on such a subject as value should arbitrarily restrict himself to such an empirical point of view. It is surely obvious that, if he is to do justice to his subject, he must at least advance to the "erkenntniss-theoretisch" point of view, if not to a point of view that is distinctly metaphysical. How his treatment of the subject is weakened by his failure to adopt such a standpoint will, I believe, shortly become apparent. In the meantime, it is something, at any rate, to have advanced from the mere subjectivity of individual feeling to the quasi-objectivity of a possible consciousness, even if the objectivity thus reached should be little better than (as with Simmel[2]) a sum of subjectivities.

The interest of the remaining part of Meinong's work is to be found chiefly in the way in which he develops the relationships of various kinds of value to different subjects of reference. All value is value for some subject, actual or possible; but the

[1] His excellent *Hume-Studien* are the only previous writings of his with which I am acquainted.

[2] *Einleitung in die Moralwissenschaft*, Vol. II. p. 9.

value of objects, especially in the region of morals, is often complicated by the fact that an individual refers them not merely to his own point of view, but also to that of some one else. We sometimes value objects altruistically; and occasionally also we value objects because we know them to be injurious to some one else. Meinong deals with such cases by introducing a mathematical mode of treatment. He symbolises the point of view of a given individual by the letter *E* (Ego) and that of some one else by the letter *A* (Alter). Similarly, he introduces various symbols to stand for positive and negative values, &c. He is thus able to formulate a number of equations expressing different modes of relationship. How far this method of treating the subject is helpful, I hardly feel myself able to determine. I suspect that it often leads to results that are more ingenious than useful. In some of these parts of Meinong's work, as in much of the work of the Austrian economists, I think there are sometimes to be found traces of the supersubtlety of workmen who are "striving to do better than well," and who often obscure their fundamental principles by over-elaboration of detail. But this judgment has perhaps only a subjective significance.

There is one point, however, in the working out of Meinong's doctrine which seems to me to have great importance, and to throw a flood of light upon the deficiency of his point of view. In dealing with ethical and especially moral[1] values, he is led (especially pp. 171 *sqq.*) to discuss the question from what point of view we pass judgment on the dispositions of men's characters. From the moral point of view such dispositions are to be regarded as Wirkungswerthe. They are valued for their consequences upon the social environment ("die umgebende Gesammtheit"). But what is the subject to which such values are referred? Meinong decides that the subject is neither *E* (the individual judging) nor *A*, *B*, *C*, &c. (other individuals concerned), but rather what may be symbolised by *X* (a hypothetical "impartial spectator," as Adam Smith would have said). The working out of this idea is one of the most interresting and subtle parts of Meinong's book. He deals, in particular, with the difficulties that seem to arise in connexion with it. The first is (p. 176) that, if an impartial spectator is to be judge, it would appear as if egoistic dispositions ought to be more highly valued than altruistic; since it is on the whole of more importance (from the point of view of "die umgebende

[1] Meinong uses the term "ethical" in a wider sense than "moral," the former (if I understand him rightly) relating to conduct in general, the latter to conduct regarded as good or evil. The æsthetic appreciation of conduct, for instance, would be an ethical, though not a moral, fact.

Gesammtheit") that individuals should attend to their own interests than to those of others. But the opposite principle seems to be adopted in our actual moral judgments. Meinong gets over this difficulty by means of the idea of marginal utility. Egoistic dispositions are little valued because they are so plentiful; they are like air or water. The other difficulty has reference to the degree of value attached to cases in which a man's own good is sacrificed for the sake of others. We tend on the whole to appreciate such sacrifice the more in proportion to its amount, and also to some extent in proportion to the smallness of the good which it is designed to secure for another. This is the reverse of what would naturally be expected from an impartial point of view. The less the sacrifice and the greater the good secured, the better would the action appear to be. In dealing with this difficulty Meinong introduces a good deal of elaborate symbolic treatment; but the essential point seems to be simple enough. A disposition which leads to the sacrifice of a great egoistic good for the sake of a small altruistic one is a more powerful disposition than one that leads merely to a small sacrifice for a great advantage; and, in fact, the former may be said to include the latter. Hence the former is naturally the more highly valued, though its result in a particular case may seem less desirable. Now I do not deny that there is an element of truth in these explanations. I have no doubt that altruistic dispositions have their value somewhat enhanced by their rarity; and I have no doubt also that we are often inclined to regard with favour an excessive amount of self-sacrifice for a very small benefit because we know that the disposition which leads to such sacrifice will also lead to other sacrifices for more worthy objects, in which the game will really be worth the candle. But I think Meinong has overlooked some important points.

In the first place, I think he is open to an objection somewhat similar to one which, in a different connexion, he himself has urged against Ehrenfels (p. 25, note), *viz.* that his treatment of this whole matter is simply an artificial way of getting beyond an inadequate point of view. The hypothetical subject symbolised by $X$ is dropped upon us, as it were, from the clouds. I find no adequate explanation of the reason for adopting the point of view which is thus symbolised, or even of the possibility of adopting it. Such a universal and (in the truest sense) objective standpoint seems wholly foreign to the individualistic psychology into which it is thus suddenly introduced. If the treatment throughout had been metaphysical or "erkenntnisstheoretisch," such an ideal subject would have fallen into its proper place at once; but, as it is, it seems

to be sprung upon us unawares, just as in Ehrenfels's sudden addition of "possible" desires. Such a mode of treatment would be objectionable even if in the end is led to satisfactory results. But I think it brings, besides, some mischievous consequences in its train. On these, however, I can only briefly touch.

The sudden way in which the idea of this hypothetical subject is introduced seems to prevent Meinong from recognising that it is essentially of the nature of an ideal self. The important consideration is not merely that I am capable of referring the valuation of particular objects to an indifferent or universal point of view, but also that I am capable of *identifying myself* with such a standpoint. It is not merely that things may be valued from the position $X$, but that the individual $E$ does actually (under certain conditions) value them as if from that position. This is the point that requires explanation; and the only adequate explanation of it seems to be found in the consideration that the individual consciousness has naturally a universal element in it. Now the recognition of this would lead to still further consequences. It would lead us, for one thing, to see that the position symbolized by $E$ is not a simple one. An individual is not merely capable of taking up the indifferent or strictly universal position $X$, but also an indefinite number of other positions. This fact, which, in another connexion, I have ventured to express by means of the conception of different "universes" within which an individual may live, seems to me to be of the utmost importance[1]; and I suspect that the neglect of it vitiates a good deal of Meinong's quasi-mathematical treatment, in which $E$ appears to be taken as representing a uniform point of view. But this is not all. If Meinong had recognised that the point of view denoted by $X$ is in reality simply one of the points of view included under $E$—i.e. that it is essentially the point of view of an ideal self—he might have been led to recognise, further, (what, from his own standpoint, it was scarcely possible for him to do) that an "Eigenwerth," as well as a "Wirkungswerth," may be appreciated from the position $X$. And this might have suggested a more satisfactory solution of the difficulties which he raises than he

[1] The idea of the different Apperceptive Systems within which an individual may live is of course due mainly to Herbart. In English it is enough to refer to Mr Stout's masterly article on "Apperception and the Movement of Attention" in *Mind*, Old Series, Vol. XVI. No. 1. The idea has the greatest value, quite apart from the peculiarities of Herbart's system; and I believe that an adequate recognition of its importance would have added immeasurably to the clearness of the work both of Ehrenfels and of Meinong.

has actually been able to find. For surely a large part of our appreciation of altruistic and self-sacrificing dispositions is not due to any thought of their rarity or any calculation of their normal consequences, but is rather a direct and almost æsthetic satisfaction in the attitude of mind which they imply. The power of taking a universal point of view, of rising above the consideration of our own individual welfare, and taking a genuine interest in the welfare of others, seems clearly to be a faculty which possesses more than a mere "Wirkungswerth." It is good for its own sake, and is so appreciated (as Shaftesbury might have put it) by the truly cultivated moral connoisseur, even "in the scorn of consequence." It is, on the whole, only as a stimulus to a jaded moral sense, that a calculation of the "Wirkungswerth" of such a moral disposition is of any ethical importance. What has ultimate moral worth is the simple fact of a man's being such a person. But to understand why this should be so, it is necessary to have a view of the nature of personality, of the ideal involved in it, of the good at which it aims, such as is scarcely attainable by means of empirical psychology, but only by a metaphysical inquiry into the constitution of the self and its place in knowledge, feeling, and action.

These few remarks must now suffice as an indication of what seem to me to be the strong and the weak points in Meinong's work. There is much more in it that is interesting; and there is also, I think, some more that is open to criticism. But the strength of it lies, throughout, in the patient thoroughness with which point after point is raised, and difficulty after difficulty met. I trust I have given a sufficient "taste of his quality" to make his strength in this respect apparent, and to induce many readers to go faithfully through his most suggestive discussion for themselves. I hope I have also succeeded in bringing his weak point to light. It consists in his tendency—natural no doubt in a disciple of Franz Brentano—to approach his subject *vom empirischen Standpunkte*. This means, on the whole, from the point of view of individualistic psychology; and if Meinong ever gets beyond that point of view, it is only by a kind of sleight-of-hand. He undermines it by ingenuity, instead of engulfing it by depth. I can only hope that the future discussions which he promises on the true nature of judgment may carry him beyond this merely psychological standpoint, and that we may soon have the pleasure of welcoming a series of *Metaphysisch-ethische Untersuchungen zur Werththeorie* from the same accomplished hand.

I have now only room to add three small observations on the general subject under discussion.

1. The importance of a treatment of Ethics from the point

of view of Value seems to me considerable. If there has been any noticeable advance in the attitude of writers on Ethics in England during the last generation, it has perhaps consisted in the adoption of this point of view, more than in anything else. A tendency in this direction can be seen in nearly every school of thought—in the idealistic school, in the biological school, in the school of rational Hedonism, and even in the intuitionist school, in so far as Dr Martineau's attempt to arrange springs of action in their order of worth may be taken as typical of that school in its most recent stage of development. In the preceding generation, on the other hand, both intuitionists and utilitarians were apt to rest their ethical doctrines almost entirely on psychology. Now it is clear enough, from the example of Ehrenfels and Meinong, that an attempt may be made to treat even Value on such a basis. But on the whole I am convinced that, as soon as the idea of Value is seriously taken as the fundamental problem in Ethics, the attempt to rest Ethics on Psychology will be seen to be futile, and a safer foundation will be sought. The new foundation may be for a time, as with Professor Alexander, a biological or quasi-biological one; but I believe that this must soon, in its turn, give place to a metaphysical one. But this is perhaps too much of the nature of an *obiter dictum*, and I will not now press it further.

While, however, the idea of Value has the advantage of directing attention to the metaphysical (as distinguished from the purely psychological) implications of ethical theory, it seems to me, at the same time, to have the advantage also of a certain superiority over the old metaphysical idea of "the Good". The latter is too apt to suggest some single end, such as pleasure or perfection, to be attained, once for all, at the end of a process; whereas the idea of Value lends itself more readily to the conception of an organic system of ends, possessing various degrees of worth.

It also serves, better perhaps than any other conception, to emphasize the essentially normative character of ethical science, as being concerned primarily neither with the simple study of existence, nor with the simple inculcation of rules of conduct, but with the investigation of the worth of actions and of types of character[1].

2. I cannot but think that it would be an advantage in the treatment of Value if the important distinction drawn by Ehrenfels between "Eigenwerthe" and "Wirkungswerthe" were more carefully observed, and if the former were thoroughly discussed before the latter are touched upon at all. "Eigenwerthe" are

[1] Cf. Meinong, p. 85, where, however, the important distinction between a practical and a normative science does not seem to be recognised.

obviously the more fundamental; and it is misleading to mix them up, as both Ehrenfels and Meinong tend to do, with those values which are derivative. One of the advantages of a careful separation between them would be found in the elimination of economic values from the preliminary discussion of the subject. At present there is too great a tendency to regard economic value as the type of value in general; whereas it is only a particular species of "Wirkungswerth[1]," and not at all typical of the nature of an "Eigenwerth." The idea of marginal utility, for instance, may profitably be extended from the region of economics to that of "Wirkungswerthe" in general; but I doubt whether much significance can be given to it with respect to "Eigenwerthe." It would be well, at any rate, at the outset to get rid of the associations derived from economics, and to start with the treatment of "Eigenwerthe," regarded both from the subjective and from the objective point of view[2]. The significance of the various species of "Wirkungswerthe," including economic values, would then become much more clearly apparent; and, in particular, the subordination of all these to intrinsic ethical values would be duly emphasized.

3. My concluding observation is a small one. Some English philosophers object to the use of the term Value as the equivalent of the Herbartian "Werth," and suggest that some such word as Worth would be more appropriate. I suppose it is partly the want of a convenient corresponding verb, and in a less degree of a corresponding adjective (for "worthy" seems to have a connotation which does not quite correspond) that has prevented the latter term from coming into general use. If this difficulty could be got over (say, by using "esteem" and "estimable" as verb and adjective), it might be convenient

[1] Economists, as already noted, have sometimes claimed the whole subject of Value as falling within their province. (On this subject I may perhaps refer to some remarks in a paper on the Relation between Ethics and Economics in the *International Journal of Ethics*, April, 1893.) But it seems clear that even "Wirkungswerthe" are more extensive than the field of economic values. If virtue for its own sake is not an economic good, neither is virtue for the sake of happiness. How the sphere of economic goods ought to be defined is a difficult question. Probably it must, after all, be defined with reference to exchange. I suppose even an "Eigenwerth" would become an economic good if it were susceptible of exchange; but the very fact that anything can be exchanged would, I think, show that it is not, strictly speaking, valued for its own sake. If it can be weighed off against something else, both the objects in question must be regarded as contributing in a certain degree to some common end; and so both are treated as Wirkungswerthe with reference to that end.

[2] From the latter point of view, it ought, I think, to be recognised that there are degrees of objectivity in Values as in other things. In fact, it is not so much a question of the contrast between subjective and objective as of the degree of reality of the subject to which reference is made.

to use "Worth" as equivalent to Eigenwerth and to confine "Value" to Wirkungswerth. It is a pity that we have not also a convenient word to describe subjective value, as distinguished from objective. Kant, it will be remembered, attempted a three-fold classification—Fancy Value, Market Value, and Dignity or Worth[1]. The first of these may be said to correspond to subjective value, whether intrinsic or instrumental, while the third corresponds to objective "Eigenwerth." But there seems to be a class still wanted to include those objective "Wirkungswerthe" which are not economic. If, for instance, Punishment is rightly valued as a means of Reformation, it can hardly be said that, so regarded, it has either a Fancy Value, a Market Value, or an intrinsic Dignity. Here, then, we seem to have a problem for the word-fanciers.

[1] *Metaphysic of Ethics*, Section II. Kant's terms are "Marktpreis," "Affectionspreis," and "Würde." I may remark here that the terms ἐπαινετά and τίμια, as used by Aristotle (*Eth. Nicom.*, I., xii., 1, and *Mag. Mor.*, I., ii.), correspond very closely to the "Wirkungswerthe" and "Eigenwerthe" of Ehrenfels—δυνάμεις in the same connexion being almost equivalent to Utilities. But Aristotle's use of these terms is not uniform. Cf. Stewart's *Notes on the Nicomachean Ethics*, Vol. I., p. 152.

## II.—ATTENTION AND WILL: A STUDY IN INVOLUNTARY ACTION[1].

By Alexander F. Shand.

### I.

There is a kind of Involuntary Action which, though not coextensive with the popular use of the word, has a deeper and more coherent meaning. To distinguish it, we have to set aside the popular use, as confusing this distinction. To avoid this confusion, we must have different terms; and the terms involuntary and non-voluntary are suitable for the purpose. The first implies the presence of Will: the second, its absence. But the meaning of the first is more fully brought out when contrasted with a third variety, which, in conjunction with the other two, leads to a threefold classification of all actions, as Voluntary, Non-voluntary, or Involuntary. The first and last imply Will: but the first, as identified with Will; the last, as opposed to it. I have thought that the study of Involuntary Action, especially where it is realised not accidentally, but through the strength of the antecedent idea or tendency, throws some new and unexpected light on the intimate nature of the voluntary process. The lower levels of conation have been successfully analysed by modern psychologists, but where conation rises into volition the analysis offered is inadequate, and often vitiated by a false method.

Some advance has been made of late by the general prominence which has been given to Attention. "The common factor in all voluntary action alike," says Dr Ward, "seems to be a change in the distribution of attention under the influence of feeling[2]." A similar view is expressed by Prof. James:—"Volition is nothing but attention[3]," and "attention with effort is all that

[1] A portion of this paper was read before the Aristotelian Society.
[2] *Mind*, XII. p. 64. [3] *Prin. of Psych.* Vol. I. p. 447.

any case of volition implies[1]." "The essential achievement of the will," he assures us, "when it is most 'voluntary', is to *attend* to a difficult object and hold it fast before the mind": this "is the *fiat*" of the will[2]. And writers of different schools seem to reach substantially the same conclusion. Thus the conception of an inner activity, which may be regarded as either thought, attention, or will, is the standpoint of those who apply psychologically the fundamental conception of the Kantian theory of knowledge. So Höffding says: "we speak of volition wherever we are conscious of activity, and are not entirely receptive[3]." And again: "in all memory and synthesis there is manifested an activity... which we call attention, when ...it is brought strongly into play[4]." Prof. Sully's treatment of the "active consciousness" has a similar result. Two phases, he says, are "always present in our active states, *viz.* attention and muscular consciousness." "The order of presentations and ideas has its passive side, as determined by external conditions and the laws of suggestion. From this we can mark off that active or conative factor which appears as soon as we begin to modify and control these passive sequences by attention[5]." According to Mr Shadworth Hodgson, this "fact or moment of attention is that which distinguishes voluntary from spontaneous redintegration[6]." A flash of light arrests the attention. "We pause to say, What is that?" "The reaction expressed in the *what is that?* is the precise moment of attention[7]." "All volition consists in this sort of reaction[8]."

Now volition may indeed be regarded in a broad sense as this inner activity of thought or attention; but while all attention is conation, it is usual to insist that the term volition is not to be applied, until some idea of a result to be achieved has arisen as a psychical antecedent of the action. Hence volition comes to be identified, not with attention at large, but with that species of attention which is directed to ideas, in external volition to motor ideas, in internal to the idea of some change to be effected in a psychical state.

But as mere expectation is not volition, and as, in other ways, we often attend to ideas without the will to realise them, something further is needed to complete the conception. "It is will," says Mr Bradley, "when an idea produces its existence[9]." When, on the other hand, this existence has not been anticipated in idea, or where the antecedent idea and its sub-

[1] *Prin. of Psych.* Vol. II. p. 561.
[2] *Ibid.*
[3] *Outlines of Psychology*, p. 313.
[4] *Ibid.* p. 95.
[5] *The Human Mind*, Vol. II. p. 176.
[6] *Ph. of Reflection*, Vol. I. p. 29.
[7] *Ibid.* p. 292.
[8] *Ibid.* p. 293.
[9] *Mind*, Vol. XIII. p. 25.

sequent realisation are either a casual sequence, or, as sometimes in expectation, the realisation is not the work of the idea, the result may be thought, but it is not volition.

Thus volition is that process of attention to an idea which leads to its subsequent realisation in whole or part. But the question arises, whether this definition does not exclude ideo-motor action, which many regard as the type of all volition. The sequence of the idea and the movement in which it consists does not necessarily involve attention: as while I am writing an obscure idea of walking about the room may arise and produce the movement, while the attention remains fixed on a disconnected train of thought. Thus ideo-motor action is conation but not volition, where it excludes attention. The question is one of a broader or narrower definition of the word, and we shall find good reasons in the sequel for giving it the narrower meaning, and for insisting on attention as an essential characteristic of all volition.

We have now to apply this conception to the facts of which it is offered as the interpretation: above all to the distinction between voluntary and involuntary action.

The classification of attention as voluntary, non-voluntary, and involuntary, presents the first difficulty. For if one kind of attention is volition, namely attention to an idea, it would seem that must be the voluntary attention. How can it be volition, and at the same time be non-voluntary or involuntary? Yet it is quite clear that attention to an idea may be either non-voluntary or involuntary. But if involuntary, how can the accomplishment of that idea constitute a volition? Again if volition is an idea realised through attention, what is involuntary attention, which seems to present a similar character? The meaning which the classification naturally suggests is that volition is not the same agency as attention,—that when the will is directed to the attention it becomes voluntary; when absent non-voluntary; when opposed involuntary. But this meaning is not reconcileable with our definition of volition.

We have seen that some idea of the result accomplished is an essential constituent of all voluntary action. We may then give this meaning to the classification. When we qualify our attention as non-voluntary, we mean that it occurs without any antecedent idea of so attending; when we qualify it as voluntary, we mean that it occurs through this antecedent idea; when we qualify it as involuntary, we mean that it occurs in spite of this antecedent idea. And, in the same way, we can explain how a volition can be in a sense non-voluntary. We will to move and this volition involves attention to a motor idea. The movement which results is voluntary; but the attention which

partly effected the movement is non-voluntary, because we had no antecedent idea of its direction. So too a volition may be voluntary twice over, if we had both an idea of the movement as well as of the movement of attention. Lastly a volition may also contain an involuntary element; as when a fixed idea possesses us and, to rid ourselves of its persistency, we consent to realise it.

But what of involuntary attention? When it occurs we say we attend *in spite of* the idea of attending to something else. In all complex voluntary attention we direct attention to one object after and in spite of the idea of some contrary direction of attention. How then is involuntary attention or action to be distinguished from complex volition?

A youth about to make his first speech foresees that he will show signs of fear, that he will tremble or turn pale, and perhaps become incoherent. If unaccustomed to the society of the other sex, he is introduced to it for the first time, he foresees the agitation he will feel, though he wills not to feel it. He sees himself awkward, not knowing what to say, and blushing when he is looked at. His action is certainly *in*voluntary; but it is an obvious effect of attention to an idea. He attends so much to the idea of how he expects to behave that he inevitably behaves in the way he expected. And his attention is as involuntary as his action. He struggles to divert his attention and to fix it on *any* object that is presented. But a fear due to his inexperience of life and ignorance of his powers at times masters him, and compels him to attend to the humiliating ideas it suggests.

There are three points to notice in this case: (1) The absence of all desire for the action accomplished; (2) the intense effort felt in resisting the dominant idea; (3) the sense of compulsion, the overcoming of our resistance.

(1) "There appears no circumstance," says James Mill, "by which the cases called voluntary are distinguished from the involuntary, except that in the voluntary there exists a Desire[1]." "Desire," says Prof. Sully, "constitutes in a greater or less degree an integral element in all true conative processes[2]." "The entertaining of distinctly painful ideas *for their own sake*, that is without any desire to get a secondary result of pleasurable consciousness from so doing, is seen by all to be non-volitional and abnormal[3]." But there are obvious cases of involuntary action which are not distinguished by the absence of desire, and do not consist 'in the entertaining of pain-

[1] *Analysis of the Human Mind*, Vol. II. p. 350.
[2] *The Human Mind*, Vol. II. p. 196.
[3] *Ibid.* Vol. II. p. 202.

ful ideas for their own sake.' A man may have a morbid craving for drink or opium; and the ideas which move to its satisfaction may at last become irresistible. Or he may take such an unhealthy pleasure in the detail of murder-cases that the idea of committing a murder comes at length to fascinate him. As the idea is passing beyond his self-control, there will occur moments in which he cannot exclude it from his thoughts, in which, though he try his utmost, he cannot succeed in fixing his attention elsewhere. At such times his attention is strictly *in*voluntary, not merely *non*-voluntary. And the pleasure and desire which, according to the theory, ought to constitute it voluntary, by adding strength to the tendencies against which the man is struggling, tend to make it involuntary. It is then futile to attempt to base the distinction between voluntary and involuntary action on the presence of desire in the one, on its absence from the other.

(2) Nor does the feeling of effort distinguish them. This "effort of will," as Prof. James calls it, is certainly present in an intense degree in involuntary action, but it also occurs in many if not most cases of voluntary action.

(3) We come next to the most important characteristic. In involuntary action what we feel is that the resistance of our will is overborne by a dominant idea opposed to it. 'Our will is overborne;' but our will, according to the analysis given of it, means only 'attention to an idea determining its realisation.' It follows that, where the idea is not in any degree realised, there can be no will. Thus if we attend first to one idea, and secondly to an opposite idea, and realise that, then there is volition in respect of the second idea, but not in respect of the first. But, where we are dealing with involuntary action, this account is directly opposite to the fact. Here it is the idea unrealised which the will supports, and the realised idea which the will is opposed to.

Let us pass to Mr Bradley's explanation. We seem, he says, "to go upon the principle that an idea has a normal, absolute or relative, strength, and that anything beyond may therefore be referred to something external to our wills[1]." Here we seem to be approaching the true ground of the distinction; but this difficulty faces us: volition does not arise until the idea commands the action, yet when this command is perfected, and the one inevitably produces the other, we find that, instead of an ideal type of volition, we may have its extreme opposite involuntary action. How then are we to distinguish them, or draw any other than an arbitrary line between that due control

[1] *Mind*, XIII. p. 32.

of an action by an idea which makes volition and that extreme control which makes involuntary action? Mr Bradley thinks that a criterion may be found in the presence of an opposite idea. If the "impulse had been normal, we feel a counter-idea would have restrained it, and therefore its strength and its result may be looked on as foreign[1]." Now if we take away from this explanation the term 'normal' which is precisely that which has to be explained, the explanation amounts to this, that 'if the impulse had been *less strong* (and presumably less strong than the counter-idea), then the counter-idea would have restrained it.' But we cannot infer, because one idea or impulse is not controlled by a counter-idea, that the result is involuntary and the impulse abnormal; for this is the character of all complex volition.

If the failure of the counter-idea to control it, is not an indication of the abnormal strength of an idea, what is? An idea of abnormal strength, we may say, is not merely one which conquers the counter-idea in a given psychosis, but one that, wherever it occur, conquers the counter-idea in that psychosis. This is to go farther than the facts justify: we cannot infer of any idea that in no combination of circumstances will it be successfully opposed. It may conquer in most, but this is no distinguishing feature of involuntary action. In great men we find a similar extraordinary obedience to the leading of one idea. This idea conquers in a variety of circumstances, and gives that unity to their lives which we mark in them.

If we reflect on it, our failure to find a criterion or principle for deciding what is and what is not an idea of abnormal strength is due to our current analysis of volition. From the basis of that theory, we can draw no other than an arbitrary line between them. If we start from a single idea, and consider the various degrees of its control of the action which it represents, we can only mark an arbitrary limit where the degree of strength should be called abnormal. If, on the other hand, we start from a complication of ideas, as in complex volition, and consider the control which one idea exercises over its opponents, then again we can only mark an arbitrary limit where its control passes the normal degree and becomes abnormal. Like the distinction between a few pebbles and a heap, voluntary and involuntary action will coalesce at a point. Let the volition but pass this arbitrary point and it will be transformed into involuntary action, while having as good a title to be still called voluntary as, at a certain point, a few pebbles have to be called such, as a heap. Two ideas are in

[1] *Mind*, XIII. p. 32.

conflict: one is realised in spite of the opposition of the other. This is the type of all complex volition. Where the superiority of the one idea is marked, it makes a strong volition: where the two ideas are more or less on an equality, weakness and indecision results. But why the superior strength of one idea which makes a strong volition should, when one fresh degree of strength is added to it, make us conscious not of greater strength but of weakness and defeat, this remains, on our principles, wholly unintelligible. We cannot base on an arbitrary distinction of this sort the profound difference between voluntary and involuntary action. There is no arbitrary point on approaching which this difference grows less, at which it vanishes. Between the two actions there persists always an irreconcileable difference. The one is always accomplished in opposition to our will; the other through its consent.

Thus we have failed to give any explanation of that feeling of constraint, that overcoming of our resistance, which is the marked characteristic of involuntary action. To the question, who or what is constrained? we can only answer, the counter-idea. To the objection, that one idea or the other must be constrained, we can only answer; the constraining idea is abnormal. To the demand for a criterion of the abnormal idea, we can only supply an arbitrary point, at which voluntary and involuntary pass over into one another.—We can never explain this sense of compulsion, this overcoming of our resistance by increasing to whatever degree the strength of one idea *merely in relation* to a counter-idea. In involuntary action we feel that *we* are conquered; and we cannot explain our defeat as the defeat of one idea by its opponent, or we should be often conquered when our victory is most complete. In some way which the current psychological theory has failed to analyse, we must identify ourselves with the one and oppose the other; so as to be able to say when the one is victorious that *we* have conquered, and when the other is that *we* are overborne. The difference between the normal and abnormal strength of an idea is not an arbitrary difference. The criterion of it is the will. The one is an idea we can control, when we identify ourselves with the idea opposed to it: the other idea we cannot.

## II.

"We are then completely in accord with those," says Prof. Ribot, "who deny that the predominance of a motive alone explains volition....It has efficacy only so far as it is chosen, that is to say, so far as it enters as an integral part into the sum

of states which constitute the self at a given moment,...so as to make but one with them[1]." But the important question is, in what sense the self at a given moment must be understood, in order that its identification with one of two conflicting ideas may explain volition, and where the opposite idea to the one chosen is realised account for the fact of involuntary action.

In the first place, the self must be selective. There must be some meaning in saying that it is identified with the one idea and motive exclusively, that the motive chosen "entre dans le moi à titre de partie intégrante, à l'exclusion des autres états[2]." The fulfilment of this condition obliges us to exclude many senses in which the self may be understood. Thus we cannot regard it as the coenaesthesis—the present mass of organic and other sensation; for this is equally present to both of the opposed ideas and in no sense selects either. Nor for the same reason is it any core of sensation which remains relatively stable and unchanged. And again we cannot take this self to mean merely the present mass of thought or awareness of objects: for both ideas are thought about, one only is willed. Nor does thought suffice for this self when desire is added to it: in many cases we desire both of the conflicting alternatives, but the self identifies itself as will with one only. Still perhaps this self is some enlarged desire or interest in the back ground with the systematic thought connected with it. For often we solve the conflict of two desires by invoking a larger interest in which one of them comes to be included; and the connected thought selects one desire. Such an enlarged interest is what we call our good on the whole, or some important part of that good, or the good of others connected with us. But if this self is to be taken to mean our interest in what is reasonable or right, then we must always will such: we cannot will what is unreasonable or wrong. And this, admittedly, is not an opinion which the modern mind can accept. We should say that the higher self chooses what is reasonable or right, but, where the lower self is dominant, that we often prefer to it a momentary pleasure. And if the self of the moment may be either one which on reflection we regard as a higher or a lower self, then it cannot be universally this more comprehensive thought-interest in which one of the particular thoughts is assimilated. What then is the mark of the thought which is the self, and in its outcome volition? In involuntary action there are two antagonistic representations, each assimilated by its own particular body of thought. Which body of thought is the self? Is it the dominant thought which is accomplished or the weaker

[1] *Les Maladies de la Volonte*, p. 32. [2] *Ibid.* p. 36.

thought which is frustrated? If you take the first alternative, you deny the fact of involuntary action: if you take refuge from it in the second, you affirm that Will must be an abortive process. It is neither universally: and as the self may be either a lower or a higher, so it may be either the dominant or frustrated thought. We cannot specify any distinctive character of thought as such, which, in its exclusive identification with one representation, marks it as the self of the moment and constitutes volition. We can but impotently suggest that the body of thought so identified which is the self of the moment, is also volition; and, conversely, that the body of thought which is volition, is also the self of the moment. Tell me which representation is willed, and I can tell you with which the self is identified, and *vice versa*. In involuntary action, we clearly recognise that the dominant idea is opposed to the self, and the thwarted idea identified with it; but this artificial phrase is only another way of saying that we will to realise the one and to restrain the other. And as we have failed to detect what Will is, so we cannot discover that momentary self from which it is inseparable.

But one negative result is at least certain; the identification of the self which constitutes volition is in some way different from that identification which means merely the assimilation of a particular idea into the body of thought which apperceives it. In complex volition, there is more than one such body of thought; but while there may be two opposite assimilations in the voluntary process, in no proper sense can there be said to be two volitions: and in involuntary action the dominant assimilation is its direct opposite.

Thus, if this more recent theory has the merit of recognising the self as an essential factor in voluntary action, it still has no clear conception of the concrete character of this self. It falls into the same mistake as the other theories, and will try to account for volition by thought, and its setting of pleasure, pain, desire, and effort. Instead of the more simple conception of one idea overcoming an opposing idea and determining action, we have the more complex conception of its previous assimilation into a body of thought and interest. Like the simpler theories, it falls into this dilemma; unless it insist on the realisation of what in the first stage of the voluntary process is merely thought of or desired, it cannot distinguish mere thought from will: and if it insist, it cannot distinguish will from involuntary action. As Prof. Ribot admits; "Considerée comme état de conscience, la volition n'est donc rien de plus qu'une affirmation (ou une négation)[1]." If it is a judgment

[1] *Op. cit.* p. 29.

that affirms the tendencies of action, all judgment of tendency is not volition. If, further, it expect some result to take place, all expectation is not volition. If, lastly, the expectation be qualified with pleasure and desire, all agreeable expectation is not volition. One man may desire the death of another, and expect it; but he does not therefore will to murder him.

What then must occur in a process of thought or attention to ideas before it can become volition in any sense that will enable us to distinguish voluntary from involuntary action? Though we do not know what this decisive event is, we may at least give it the name which common usage appropriates for it. We name it Will: and if the attempts of psychologists to explain it as some combination of the factors present in conative processes, as pleasure, pain, desire, sense of effort, the tendency of an idea to realise itself, attention and assimilation into a body of thought and interest—if these attempts fail, we are led to suspect that will is no mere combination of other constituents, and, conversely, cannot be analysed into them.

## III.

A common assumption, a common prejudice, stands in the way of this conclusion. Though we accept the theory of evolution, though the biological conception of development has transformed the method of psychology, yet, in one department, we are still unconsciously bound by the methods of the older psychologist. We have rejected, as we think, their atomistic psychology, their shallow attempt to build up the higher psychical processes by putting together the elements found in the lower; yet we do not recognise that the current theories of will are so many exemplifications of this combinational method. We take Will as the higher level of the conative development; and then show that it is nothing new but only a regrouping and complication of the constituents of lower conative levels. And what is the consequence? When we come to the higher level we are unable to interpret it. Pleasure and pain, desire, sense of effort, ideas moving to their realisation, complex thought-processes which assimilate them, are present at a stage which, if you like to call it Will, is not Will in any sense that will enable you to interpret the fundamental distinction between voluntary and involuntary actions,—taking the last in a close sense, as actions which through the dominance of the antecedent idea of them, thwart Will and accomplish themselves. In all this it does not occur to us that in the growing complexity of the process which marks the uprising of Will a "transforma-

tion" may have been effected, and that Will may be as much a specific differentiation of conation as the various class-sensations are recognised to be differentiations of a common sensibility. What would now be thought of a psychologist who, starting from a level at which there were organic and tactile but no visual sensations, attempted to explain the latter as some re-grouping of these more primitive sensations? Yet this is the very method we apply to the Will. But as, in comparing visual and auditory sensations, we see at once that each has developed a unique quality of its own, so when we compare Will with Thought and Feeling, or with the lower conative development, we shall find in it too a unique quality which cannot be analysed into others, or constituted out of them.

And now see how readily this conception, as at least a reasonable hypothesis, interprets that fundamental distinction which is a crucial test of any theory of Will. In involuntary action, we identify ourselves with the frustrated idea, not with the idea accomplished. Both ideas are thought about, of both we foresee certain consequences. Both ideas derive some support from pleasure, pain, desire, or habit. Now which body of thought and tendency is the self of the moment? That only which under the requisite conditions has differentiated as Will. And that idea which is identified with this self is the idea we will to accomplish, and its accomplishment is a voluntary action. But where its accomplishment is impeded by an idea or tendency hostile to it, and which in place of it is accomplished, that result is an involuntary action. Not for all our attention to this idea, not for all the thought and impulse which assimilates or supports it, is the common mind a moment in doubt whether it be one with its Self: but as the Self is utterly alienated from this idea, so when this idea is perforce accomplished it feels an extreme weakness.

Here it is natural to object that we still have not shown what Will is. Can nothing more be said of it than to name it a differentiation of conative thought? And the objection implies that it is further analysable, and again can be reconstituted by combination of its elements. We may analyse the psychosis in which it occurs, and the kind of thought which is inseparable from it, and the idea which is its centre of attachment, and the psychical conditions on which it is dependent; but that differentiation of thought which these conditions provoke, will remain at bottom like a sensation of colour or sound, in respect of its quality unanalysable.

Thus the conclusion reached in the last section receives an indirect support from this. We there inferred that as we could not constitute the event, Will, out of any combination of the

events present in the common conative processes, that probably the quality of this event was unique. Our argument has now been to show that, on our own principles, we should never have assumed that we could constitute it. Our assumption ought to have been precisely contrary. In following the development of thought and conation we should have been on the look-out for any differences in the process which, on the face of them, bore an analogy to the differences of the class-sensations. Then we might perhaps have concluded that Will is but one among many differentiations of our attentive thought, or conation.—From this basis are developed the unique differentiations of Supposal, Question, Judgment, and those modifications which are always found in union with one or other of them—the Categorical, Problematical, and Disjunctive: and from the same basis the unique differentiation of the Imperative.

I will now summarise the principal inferences which are based on the fact of involuntary action, and give some account of their bearings on the theory which is common to most psychologists.

The first is: that which makes an action *in*voluntary, as distinguished from one merely *non*-voluntary, is the presence of a volition opposed to it. The second is: this volition is abortive: we will to realise one idea and fail; but we realise a counter-idea which we opposed. The third is: this abortive volition is more than attention to an idea with desire and effort, and contains a distinctive event,—the exclusive identification of ourselves with one idea. The fourth is: this identification is specific, and cannot be resolved into the assimilation of one idea by a body of thought and tendency, which we find in all thought. The fifth is: this identification, this event Will, regarded in its quality or character, is a unique differentiation of conative thought. The sixth is: this event, like all other events, is active, and modifies the psychosis into which it enters.

It will be instructive to compare the second inference with the view held not indeed by all psychologists, but which the most clear-sighted have recognised to be essential to their common theory. This view regards the realisation of the idea as essential to volition. "It is will," says Mr Bradley, "when an idea produces its existence[1]." Mere thought is not will: and the question is whether its sequence "has an ideal character, which going before, has thus made its own existence in fact. And, where this is not the case, the process is not will[2]." Yet we have seen that, in involuntary action, the essential character is that the idea we will to realise does *not* produce its existence.

[1] *Mind*, xiii. p. 25. [2] *Ibid.* p. 26.

But here a subtle critic may say: Is it certain that the idea wholly fails to realise itself? if it realise itself, however incompletely, the result is will.

Now when we speak of an involuntary action we are abstracting. We break into the whole process of which that action forms a part, and separate this part. Involuntary action may be but one moment in a process, but, at that moment, volition is abortive, though a moment before or a moment after the same volition to realise the same idea may have been fruitful. In the *Death of Ivan Illitch*, Tolstoï gives a vivid illustration of involuntary action due to terror. The dying man as he sees death approaching him from day to day is struggling to shut out the thought of it. He tries to absorb his attention on reading, playing at cards, conversation; and to artificially resuscitate the many interests which the approach of death has extinguished. But in a little time these objects, one after another, grow transparent, and he sees Death through them looking at him. *Then* he cannot exclude the idea of it, then he cannot maintain attention to the counter-ideas. At that moment his will is abortive. For he willed to exclude the idea of death; and, so far from excluding it, the idea developed and dominated him. In what degree was the idea of the will realised?—Again, take the volition on the other side. He willed to concentrate attention on an opposite idea; and this idea became transparent, showing Death through it, and at last was, for a time, extinguished. In what degree was the volition realised on this side?—But suppose there are other cases, and that, at times, both the idea of the will and the idea to which it is opposed are in some degree realised. Then there is a mixed voluntary and involuntary result. The idea of death, say, is restrained, it does not quite dominate attention: for with great effort the man keeps a faint and isolated hold of the ideas in a book or in the remarks addressed to him. So much, then, is volition, and consists of an idea in part realised: but what of the involuntary side? Where his action is involuntary, there his volition is abortive. The idea of death is less intense, but still torments him, and he willed to exclude it. At this point, where the voluntary result ends and the involuntary commences, there the volition becomes abortive; and the action *qua* involuntary implies to this extent a wholly abortive volition. Of course this is an abstraction; but involuntary action is an abstraction, and, like other abstractions, makes a smaller and artificial unity out of a larger and more concrete unity.

Now take the more concrete unity. Two opposite ideas are in part realised. Both then are volition: but there cannot be two opposite volitions at the same moment. You must make

a selection, but on what ground can you make it, when both ideas have the identical character which, you say, is a criterion of Will? Thus we are brought round to our old conclusion. It is only because the Self is identified with the one idea and opposed to the other, that the realisation of the one is voluntary and the realisation of the other involuntary. And this identification of the Self we can never explain as any mere process of thought, unless we include in the meaning of thought the differentiation of it we name Will.

Looking generally at this question, it might seem strange how realisation of an idea ever came to be maintained as essential to volition, if we did not remember that without it, on the common theory, the distinction between thought and will is lost. That volitions are often formed to take effect at a future time, and when that time comes are either forgotten or revoked, would seem a common enough experience. These intentions, as we call them, are genuine volitions where they are themselves genuine. James Mill excluded them by a common device. He framed a definition of the will for that purpose :—"The will relates only to immediate acts[1]." But had he analysed involuntary action, and not been satisfied with a superficial observation, that absence of desire constituted it involuntary, he would have found in it a volition relating "to immediate acts," yet not in his sense a volition, inasmuch as it failed to realise these acts. He would then, on his own principles, have been bound to class it as motive and desire[2], and, as consequence, either to deny that the action realised in spite of this motive was *in*voluntary, inasmuch as a motive only and no volition opposed it; or admitting that the presence of this opposing motive constituted the action involuntary, he would have been compelled to draw the equally absurd inference that all complex volition is involuntary, since here too an action is realised in spite of an opposing motive.

The sixth inference is a very obvious one, and can arouse no opposition where it is rightly understood. Wherever a new event occurs in a mental process, we may infer that it modifies the psychosis into which it enters, not merely by the bare fact of its entrance, but by some change which it tends to set up among the constituents of that psychosis. In every science, we make an analogous assumption: no event, however insignificant, is without some influence on the objects or events connected with it. If we mean no more than this in calling the will 'active' or an 'activity,' the statement may pass. But a more important question is, what is the character of its activity,—

[1] *Analysis of the Human Mind*, vol. ii. p. 398. [2] *Ibid.* p. 353.

what change does it tend to produce in a psychosis? We hold that all co-presented events strengthen or weaken one another, according as they can be taken up into the same system of thought, or are incompatible. And as, in involuntary action, the will is combined with one idea, and in opposition to another, it seems reasonable to infer that it strengthens the first, as it weakens the second. But in what respect are the ideas strengthened or weakened? An idea may have, at a given moment, a strong tendency to evoke other ideas with which it has been experienced; or on the other hand, to realise the object which we take it to represent. And our question is whether the will strengthens not the first and general tendency, but the second, specific, tendency. Certainly, many ideas are realised in the world which without a will and a strong will to realise them would not be. But such a volition may be variously interpreted. Does the will, not in a loose and popular sense, but as precisely the differentiation of thought which we have found it to be, strengthen the movement of an idea to its realisation? That realisation may be ordinarily explained as due to the activity of the idea, to pleasure, pain and desire, to attention and the system of thought supporting the idea: but at least will, if it occur, should co-operate. It cannot be an impotent spectator, for even thought is not that. It must be an agent; or we should have to give it an altogether exceptional position among mental events. But if it act, what action is so obviously its own as its tendency to realise the idea which it also wills to realise.

We soon learn to distinguish between ideas which, when they occur, maintain themselves with prolific development, and ideas which attract the attention for a moment, and then, as Prof. James expresses it, "go out." The first do not require the will for their support: the second, if they are to be maintained must be voluntarily arrested. What is the nature of this arrest? Is it attention? Attention may be already present to this idea, and see and foresee its rapid effacement. Then, neither the strength of the idea, nor our attention saves it from extinction. But our attention yields always a clear awareness of the fact; and so a new idea is suggested of saving the first idea. Does this idea save it? Sometimes no doubt. It may have a strength which the first has not, and its realisation be the outcome. At others, it cannot; and what happened to the first idea may happen to it. Through attention we may be aware of its rapid disappearance. But if, notwithstanding, it do not disappear. If we experience a new change in ourselves, in our attitude to the idea, which we name Will, and with it the arrest of the idea, then we can ascribe this arrest neither to the

idea nor to attention, but only to the new event of the occurrence of will.

There is a last inference which we shall accept with great reluctance. Though many practical people have a strong conviction that the will does not always follow the strongest present motive, psychologists have felt that in order to give any scientific account of the will, they must assume that it always does. What explanation can be given of a will that sometimes yields to, sometimes thwarts the stronger of two competing tendencies? A moral or metaphysical explanation might be forthcoming, but could a psychological one be found? But we are here concerned, not with an explanation, but a fact: and the brilliant description which Prof. James has given of it shows that, in appearance, at least, it is not in agreement with our assumption. In all "hard cases of volition," he says, wherever "effort" complicates the process, we feel "as if the line taken when the rarer and more ideal motives prevail, were the line of greater resistance, and as if the line of coarser motivation were the more previous and easy one, even at the very moment when we refuse to follow it[1]." Yet he has not ventured to express more than this surmise. Those moral resolutions which he has taken as examples are indeed so ambiguous, and have been interpreted from such opposite points of view, that it seems impossible to base any certain conclusions on them. Though it is an assured fact that we sometimes act contrary to the desire which, if not the strongest, is certainly the most intense, and sometimes in favour of an alternative which may be desirable, but for which we feel no actual desire, it does not follow that the idea of this is on the whole weaker as a motive to action. Subtle threads of association and habit, which cannot be felt and can only be judged of by their result, may connect this idea with the action which accomplishes it; and while the painful effort we feel expresses our thwarted desire, it may be no indication of the relative strength of the competing motives.

Thus we are left with opposite explanations of the same fact which alternately appeal to opposite sides of our nature. But, in involuntary action, we have no mere surmise that the will sometimes follows the weaker motive, but evidence apparently so strong that we can draw only one conclusion from it.

If, where there are two conflicting ideas present and one is realised, the idea with the strongest tendency to action necessarily engaged the will, then, in involuntary action, the idea realised we must also will to realise. The will cannot be in

[1] *Op. cit.* vol. ii. p. 548.

alliance with the frustrated idea, because its defeat has proved it to be the weaker. Consequently there can be no such fact as *in*voluntary action. But if there is such a fact, then the will supports the weaker and frustrated idea. Now an idea regarded as a "tendency to action is properly denominated Motive[1]"; and the strongest present motive is the idea with the strongest, present tendency to action. Consequently we are expressing in another way the same conclusion in saying: If there is such a fact as involuntary action, there the strongest motive is realised, but the weaker motive is willed.

## IV.

There is a class of involuntary actions to which I have made no reference in the preceding account, because of their little interest for Psychology. They are those in which an external circumstance realises an idea in opposition to the will without that idea playing any part in its own realisation. To these cases, the various conclusions reached have no application, except that here, too, the will is abortive through the realisation of an idea or tendency opposed to it: and this may be taken as the common character of all involuntary actions in the strict sense. Popular usage, indeed, includes, in the meaning of the word, actions which have never been anticipated in idea, as reflex actions; or as when we make some slip or mistake, and so fail in what we had intended; or where we strike someone accidentally. But these actions are strictly speaking non-purposive, or non-voluntary, not involuntary; because we had no antecedent idea of them, and therefore the will could not act against this idea. But here the will does oppose an idea which some external circumstance realises. Suppose that a doctor kills in endeavouring to cure his patient. He may have thought of this event as just possible through the action of the drug prescribed. Yet it was not the idea of this event which worked its own accomplishment, but its accomplishment occurred disconnectedly, and through the operation of causes in which the idea had no place. Still the accident is involuntary on the doctor's part, because it is the realisation of an idea in opposition to the idea of the Will.

Thus the assumption we make so readily, that where two ideas are in conflict and one is realised, that realised must be the stronger, is not universally true: the stronger idea may meet with some obstacle in external circumstance, and the

[1] James Mill. *Op. cit.* vol. ii.

weaker with an event favourable to it. But if realisation is no conclusive test of the superior strength of an idea, what other test have we; and how can we be sure that, in other cases of involuntary action, the idea opposed to the will is the strongest motive? We must answer that, in all other cases, we cannot explain the fact except on this assumption. How, otherwise, is it possible, when a man is possessed by some anxiety, that he often cannot attend to any idea opposed to it. He reads words on a page or listens to words spoken, but time after time their meaning escapes him. His volition to attend to them is sometimes abortive: and there is no explanation of this fact, unless we assume that this pressing anxiety, through its dominance as motive, extinguishes all ideas opposed to its systematic associations. In pathological cases, where a fixed idea is present, we can only explain the failure of the will by the abnormal strength of the idea. And the case of physical pain is familiar to all of us. When not too intense, we can forget it for a time, and direct our thoughts elsewhere. But if its growing intensity pass a limit, it compels attention, and extinguishes all thought apart from it. Still it may be said the persistence of the painful sensation and its associations is not due to the idea that we have of its persistence, nor is the idea of the will to forget it or shut it out of the area of attention rendered abortive through this idea, but through the fact of its persistence, as dependent on conditions among which the idea has little influence. And this is true; but notwithstanding the will is supporting the weaker motive although the motive opposed to it is no idea. The painful sensation shows greater strength in holding the attention and developing its own ideas, than the ideas supported by the will. And when these are extinguished and the sensation engrosses us, the involuntary action can only be explained as due to its superior strength. Thus we can only explain the common varieties of involuntary attention and action on the assumption that the motive which the will supports is weaker than the motive it opposes,—even when the force of the will is added to the weaker.

There are two other means at our disposal for estimating the present strength of opposite motives. We may take first the theory of Prof. James that the "states of mind which normally possess the most impulsive quality are either those which represent objects of passion, appetite, or emotion...; or they are feelings or ideas of pleasure or pain; or ideas which for any reason we have grown accustomed to obey...." "Compared with these various objects all far-off considerations, all highly abstract conceptions, unaccustomed reasonings, and motives foreign to the instinctive history of the race, have little

or no impulsive power. They prevail, when they do prevail, *with effort*....[1]" But as, in any particular case, we cannot be sure that the strength of some propensity is not balanced by the habit of obeying some abstract idea, if we are to make any practical use of the theory, we must rely on the feeling of effort which complicates all "hard cases of volition." Yet if we suppose that the feeling of effort is an indication that the will is reinforcing the weaker motive, we see at once that there are cases to which the supposition cannot apply. We cannot argue that where we have the alternatives present of descending a mountain or climbing to its summit, or the choice between a drive and a walk, and select the latter, that the greater effort felt is an indication that the will has selected the weaker motive. Thus we are brought to the distinction of Prof. James between effort of will and "the *muscular* effort with which it is usually confounded"; and to confining our supposition to the first variety. But can the distinction be maintained on these lines? If we hold that all other effort is muscular, it is hard to establish effort of will as an exception. Effort of will would arise, at least in part, from the process of attention which volition involves, and be the inward expression of the motor processes connected with it: and it seems reasonable to suppose that, taken as mere muscular effort, it would become more intense, not merely in proportion to the resistance or inertia of the idea attended to, but also in proportion to the strength of the competing idea present. Without then supposing a difference of kind can we in some other way distinguish them? The commoner muscular effort may be due to reflex action, or to a conative process which is not specifically will. The other is specifically a voluntary effort; and is due, not to the outward accomplishment of a volition, but to the inward making of it. It comes as the immediate and not the subsequent effect of will; and we experience it, at least we only distinctly experience it, where we seem to thwart the stronger motive. For if, after struggling with passion, we yield, the feeling of effort which had been painfully conspicuous disappears. The metaphors which poets use to describe this state are taken from movements which are almost effortless, such as 'sliding,' 'slipping.'

> "On roses red I seemed to slip."
> "She gave me a cup of the gods to sip."
> "I kissed the rubies of her lip."

If then we can distinguish, as we can in many cases, the effort felt immediately in our volitions, as internal processes, from the effort felt in their external realisation, then we may

[1] *Op. cit.* vol. ii. p. 536. See also pp. 548—9.

say volitional effort occurs whenever the will interferes with, what might be called, the natural supremacy of the strongest motive.

And as the effort felt in supporting an object in the hand is a rough measure of the relative weight of the object, so, we might say, the degree of volitional effort is a rough measure of the relative strength of the motive which the will opposes.

But, in this inference, we overlook a feeling of effort arising from three different sources which is immediately felt in volitions, and yet cannot be explained as due to the competition of a stronger motive. In the first place if, where the weaker of two competing ideas is selected, that must occasion a feeling of effort, then, where the two ideas are equal in strength, that will probably occasion some feeling of effort, whichever be selected. In fact we may go farther and infer that, wherever two ideas are present and one is selected, the rejected idea, however weak, will tend to arouse a feeling of effort in inverse proportion to its weakness. Thus it will be only at some point in the growing intensity of the feeling that we can infer the presence of an opposite idea of superior strength; and it will be difficult to fix this point.

In the second place, all attention tends to arouse some feeling of effort as the subjective expression of the motor processes which it stimulates: and as we may have attention without volition, but no volition without it, so some degree of volitional effort must be discounted as due to the mere presence of attention. But while our non-voluntary attention occasions a sensation of effort so faint that it is either inappreciable, or can only be appreciated by the psychological expert, in all "hard cases" of voluntary attention, it is so intense that it can be appreciated by everyone.

Lastly, there is a feeling of effort which is immediate and yet cannot be referred to the competition of an alternative idea of action. A common example occurs in voluntary recollection. We may be trying to recollect a name; and the idea of recollecting it from which we start may not be complicated by an idea of any alternative direction of our thoughts. Yet, the attempt to make the idea instrumental in evoking the name may occasion a considerable feeling of effort. This case shows that volitional effort may be partly due to the inertia of an idea, as well as to the competition of a counter-idea. Nor can we often assign the amount of effort which must be assigned to the one cause or to the other; for in will proper, or complex volition, they both operate together. On the whole, we must conclude that the inferences we make as to the relative strength

of our ideas as motives, if based on the feeling of effort, are mostly uncritical and without scientific value. Yet, notwithstanding, there are cases familiar to most of us, where the idea is so easy of accomplishment, so habitually performed, and occasioning, in normal states of mind, no appreciable degree of effort, that the intense effort sometimes felt, where there is a counter-idea present, may be reasonably inferred as due mainly to its superior strength. All language expressing the common experience of men, has incarnated these great differences in the degree of the feeling. If we find that such metaphors as 'struggling,' 'fighting,' are commonly applied when we oppose passion, but seldom or never when we oppose duty; if opposite metaphors like 'falling,' 'sliding,' 'slipping,' express our feeling when we side with the one, but never when we stand by the other; then we may reasonably infer that the great difference of feeling is mainly to be attributed to a great difference in the relative strength of the motives, and to whether the will yields to or resists the natural supremacy of the strongest.

We may sometimes employ a second means of estimating the present strength of conflicting ideas and motives. We include in their total strength a strength derived from many sources, from the ideas or sensations that support them, from habit, from pleasure, pain, desire, and attention. But as we have to consider their relative strength before the will reinforces one of them, we must exclude its influence.

We have seen that an idea may be strong in one respect and weak in another. It may show a strong tendency to develop a train of ideas or reverie in harmony with itself, but no perceptible tendency, at the moment, to pass into outward act. But its strength in every respect is expressed in its self-maintenance or development, as its positive weakness, in every respect, is expressed in the tendency, as Prof. James calls it, to "go out." Now if we find that one idea, either maintains itself in full, or, while losing what is accidental, becomes the coordinating centre of a train of ideas or images with the same general character, while another opposed to it appears, arrests the attention for a moment, and is then obscured and extinguished, then, it is quite clear, that the first idea has a stronger tendency to develop in this direction than the second has to develop in any. And as an idea regarded as a tendency to produce some result is properly denominated a 'motive' in respect of that result, so the first idea is a stronger motive in that respect than the second is in any.

Now it is this kind of conflict we so often witness in our internal volitions. We recognise that one idea is strong, as

evidenced by its development, while another idea in opposition to it catches the attention for a moment and is then obscured. But if while it is slipping from us, a volition arises directed to its maintenance and to the extrusion of the idea which, so far from disappearing is throwing out new schools of development, then, in this volition, we have conclusive evidence that the will is supporting the weaker motive.

The argument so commonly urged that the relative strength of motives is only shown by the realisation of one of them, overlooks this intermediate stage of development or decay. Therefore it can recognise no scientific test of the strength of a motive in the stage antecedent to its realisation. It fails to observe the continuity of the process. Between the presence of an idea and its extinction, is no gap, but the process, more or less elusive, of its obscuration. Between the presence of an idea and its realisation, is again the process, more or less elusive, of its development,—in external volition, the tension of the muscles which precedes their contraction, in internal, the new ideas of identical character which are beginning to manifest themselves.

## III.—ORGANIC EVOLUTION AND MENTAL ELABORATION.

By Hubert M. Foston.

Few common fancies have been more fascinating,—and that in widely different ways to different classes—than the idea of man as a microcosm, a little world or state in himself. This conception arises naturally and simply enough out of his reflection upon the complex economy subsisting within the limits of his own nature; and it is often by its means that his younger generations, listening wonderingly to the stories of symbolical fairies and giants within their own small beings, are introduced unconsciously and fearlessly to nothing less formidable than the psychological analysis of the basis of ethics: and much of clearness or of confusion in later didactics is attributable to its use or abuse. Again, upon a wider view, together with the large place it fills in general literature, it has had a most distinguished career in philosophy, steadily growing in definiteness and importance. The writings of Plato mark the point at which philosophical history begins to be traceable by anything ampler than fossil remains; and Plato himself, it will be remembered, regarding the individual man as an epitome of the state, preferred to read the laws of his moral constitution where he was sure they must be "writ large"; while almost at the beginning of our own English philosophy sprawls the huge, unhealthy figure of Thomas Hobbes' *Leviathan*.

If it be objected that such instances belong to "political philosophy" rather than to philosophy proper, and that the presence of the idea is a matter rather of artistic choice than of logical necessity, we have only to take philosophy in a deeper and stricter sense to find the idea of fundamental importance. Especially in the modern period, since the antithesis of intelligence and nature, mind and the external world, has been more sharply defined, there has been a tendency to represent the intellect of man as forming a sort of anti-world in itself, set over against what we call the world, or the universe without,

yet in some way containing its main principles. The tendency is, in a sense, a necessary one: "rational metaphysics" can never lay claim to be held in any estimation except on the assumption that man's nature, more especially his intellectual nature, is a small copy of the universe in all its essential aspects,—or is, as it were, its pocket note-book, from which its most intimate secrets can be read.

Accordingly, in the last great example of a metaphysical philosophy which has come to us from over the North Sea, we learn that our minds are animated by an intelligence which is identical with nature, yet greater than nature. Man's intelligence is thus a part of a rationalized universe,—a part which yet in essence contains the outer whole. In a word, the microcosmic idea seems to be taken up and handled in such sort as to be literally turned inside out. And in saying this I mean, I am sure, no irreverence to a mighty system. It was very reasonable of Hegel to turn the idea inside out if he wanted to see how much was in it.

Something he found in it, or developed out of it, which is very much to our present purpose. He found an analogy between the dialectical stages through which the "ordinary" consciousness rises from mere apprehension of things as they appear in sense, to the finished state,—in which it becomes Hegelian and sees everything as everything else, itself in particular,—and the stages through which Nature rises from mere mechanical to self-conscious being.

This analogous evolution, as Hegel states it, has more the look of a dialectical dream than of a scientific handling of fact, although matters of fact are beautifully woven into its pattern. But that silent, isolated mind seems to have been so imbued with the spirit of Nature, that when it dreamed,—as perhaps it generally did,—it dreamt somewhat after Nature's plans: and the thought is admitted to have had a certain scientific suggestiveness.

That this is not all, that the idea is susceptible of being seriously worked out on a more positive method, is the conviction underlying this paper: and it is to afford grounds for a first presumption that this is so in regard to the development of organic nature that it is being written. Looking at nature and mind, the cosmos and the microcosm, and marking their features as the patience of science has enabled us to distinguish them, we find three successive grades of organic evolution,—exhibited in Vegetable, Animal and Social life,—and three successive grades of intellectual elaboration,—Perception, Imagination, and Conception, or reason. The question comes to be: is there here an analogous evolution?

Lest the question should seem to be a startling one, it may be well to assure ourselves that it is not an abrupt one, by following the movement in the philosophy of the present century which has been leading us gently on towards it.

We have already heard some such question vaguely asked—and appropriately answered—by Hegel, in Germany. A little later, Comte, in France, was busily engaged upon a great encyclopædia destined to be compared, now flatteringly, now disparagingly, with his. Comte's extraordinary perversion of psychology led him far from asking any such question. But in taking apart the problems of outward nature, and looking at them—except when terrified by some theoretic bogey—from a matter-of-fact point of view, and connecting them into a simple unity, he was doing for nature precisely what psychologists, struggling with the false suggestiveness of the faculty-hypothesis, were beginning to do for mind. It often happens in philosophy that a question is forgotten for a time, while science prepares materials for asking it and answering it more definitely[1].

And now, in our own country, in the course of constituting the great synthesis which is still undergoing completion, Mr Herbert Spencer has shewn the fundamental identity of the laws which govern evolution alike in inorganic nature, (with which we are not now concerned), in organic nature, and in mind. All is set forth as proceeding according to the universal laws of differentiation and integration.

Organic evolution and intellectual elaboration, then, are so far analogous as to follow the same laws. The point of further interest is: whether they advance by comparable stages.

To sketch the first outline of our problem, we must observe that the study of organic nature is usually divided into two departments,—the biological and the sociological. In the one, the individual organism forms a complete object of study: in the other, we are concerned with complex aggregates. Similarly in psychology, it is customary to begin with the analysis of the particular idea; and afterwards to take for our units the combined groups of ideas involved in conception, or general thought.

In each case there are two topics in the earlier and simpler department. On the one hand, there is that of vegetable life, and the further one of an inner sentient animal life. On the other hand, after perception comes the inward development into imagination. And as the animal has its inner mental life only upon the basis of its modified vegetal organization, so the image,

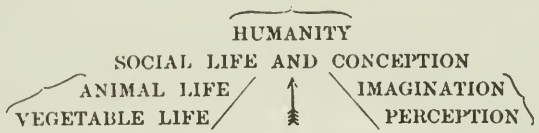
[1] The history of modern science previous to the present century seems markedly to illustrate this in reference to the whole question of evolution, —thus in itself affording an example of the evolutional "rhythm."

along with its peculiarities, retains the essential formal characteristics of the percept.

Coming to the department of the higher complexities, we have, on the one hand, social life; upon the other, conception or reason. To feel the full interest of this collocation it must be borne in mind that from the point of view of positive science, as it has at present to be defined, developed social life and explicit reason are the two distinguishing characteristics of humanity. Taken together—and they are brought together here—they form the main scientific *differentia* of man.

In their highest graduation, then, the two analogous developments proceed as definite concomitants. Lower down, they are less and less concomitant: imagination is not more a *special* characteristic of animals than perception; and vegetable organization and perceptual ideation, though still exhibiting, as we shall see, analogous phenomena, have, in fact, nothing to do with one another.

A diagram of the whole scheme, then, might be such as this:




There is something so dangerously alluring to the philosophic mind in the idea of having fairly got humanity into a corner like that, with Life on one side of him, and Mind on the other, and nothing but our own "pitiless logic" in front of him, that—if we are at all inclined to agree upon the matter—we shall not at once shake off a fear that this is one more philosophic dream. We may remember, however, that criticism seldom fails to apply its awakening pinch to those that dream and babble in their sleep; and meantime let us try in all sobriety to walk observantly up the avenue that has disclosed itself before us, and see what test of reality is given us by such facts as appear most distinctly upon its two convergent sides.

## I.

### (A)

Now in taking up together the Vegetable and the Percept —it seems at first about as congruous a companionship as that famous one of the Walrus and the Carpenter,—we must of course clear out of our minds any *débris* of the exploded fiction that in

perceiving we perceive objects which are just like the mental percepts, but which do not themselves become percepts,—i.e. are not perceived. Psychologically, the intelligible object is first constituted such in perception.

Hence we have, on either hand, the beginnings of definite organization,—on the one vital, on the other ideal. The case may be stated thus: a hypothetical simple tissue is being differentiated and integrated into vital unities, called vegetables,—the primary form of living thing; a hypothetical "sensation-continuum" is being differentiated and integrated into ideal unities called percepts,—the primary form of intelligible object.

It will be observed that in these basal regions of organization and ideation the two great problems of Life and Intelligence first come before us—in the simpler forms in which they are most obviously to be distinguished from one another[1]. At the heart of both these problems is a something about which all endeavours to ask a really articulate question seem destined to end in metaphysical choking. But of late we have been greatly pleased to conceive them both (and perhaps occasionally to confuse them together) under a more definite and extended form of the old notion of the soul as a harmony. This is that very useful idea of adaptation to environment, involving a complex harmony within which is in further harmonious relations with what is without.

Bound up with this idea we have a theory, of stupendous range in the organic world, as to how the varieties of organism[2] came to be. We premise that along the lines of descent from organism to organism there is a certain constant preservation of characteristics as they are formed, together with progressive variations. In order that this endless bringing in of change upon the basis of the unchanged may not result in the disaster of new cloth upon an old garment, and the break-up of the integrity of the organisms, the differentiations must be steadily woven into them through concomitance with ever-fresh co-ordinations of their parts, extending through their whole constitutions. Hence we get successive co-existent sets of organisms, having amongst them ever-deepening differences, and at the

[1] The problems, that is, as they now stand. How far the unravelling of them may fairly shew them to be all woven of one thread, I do not prejudge.

[2] It may be well to remind the reader that, though many of our observations may apply equally to the higher kingdom of organisms and realm of ideas, we are here concerned throughout with principles whose working is seen apart, and therefore most distinctly, in vegetable life and in perception. It is obviously the mark of this lowest stage that our problems should not be specialised.

same time ever deeper and more complex similarities,—similarities, that is, in more and more varied features and relations.

It is hardly necessary to pause here to point out in detail the correspondence of these principles with those regulating the effects which percepts and ideas formed in the mind at any time condition in any later related ones, under the laws of differentiation and redintegration. So far it will probably appear so obvious as to render an undue identification of the processes in the two cases the only danger. But after looking more closely into the conditions of the differentiations and integrations taking place on the organic side of our avenue, we may perceive an apparent discrepancy upon the mental side. This we must examine as nearly as we can, without falling into the invisible depths of the metaphysical ditch that everywhere runs beside it.

For in organisms the possibilities of variation are supposed to be indefinite, and the modes of co-ordination likewise *a priori* unregulated,—limit and order being introduced through selection. But, metaphysical paralogisms apart, can we conceive of any such *a priori* indeterminateness being actually manifested in the development of perception? Successive percepts of any kind are more and more highly differentiated in various directions, and consequently redintegrated in more complex ways; yet the question that obviously arises, is: are not the possible directions fixed in advance by the character of the objects perceived, rather than by any *post facto* limits of selection?

But when we look into psychology from that point of view at which we demand indefinite variability for organisms, we have to regard perception as being a mental function, and, as we shall see, a function *teleologically* determined, like all other functions. The function has come, with us, to be the production in consciousness of all that curious construction, which—when it has been so produced—we call the external world; but it need not have been that originally. Applying our principles fairly all round, we must suppose that when mind dawned, and anything that could be called perception began, the first vague, undifferentiated forms of the percepts tended equally to present what we now recognise as the external world, and—*anything* but that. Now it is obvious that some modes of perception would render the perceivers more highly adapted to their environment, while others would tend to unfit them for it. Hence, only those minds in which the percepts are formed on certain *selected* lines will in the end be found surviving. The minds now existing, therefore, may be regarded as being such as to find, through their relations to outward nature, a law in themselves, according to which only certain forms—the fittest—of percepts can survive in them. That is, the microcosm, taken in its necessary relations

to its own outward formative environment, is a determining environment for ideas, as the cosmos is for organisms.

It is true that in the existing individual minds that we have to study the line of safe evolution is found by percepts with much more ready certainty than we can suppose it to have been found by the early organisms in the cosmos. But then it must be remembered that that type of mind has especially tended to persist, within which the selection is promptest and most summary. Thus, in the favoured modern mind, action according to the laws of differentiation-with-integration, and natural selection, is doubly determined to a short and easy embryonic path[1].

## (B)

Having dealt thus with the most pressing of the general questions which first come before us in considering Plants on the one hand, and Percepts on the other, we make the transition to the special characteristics distinguishing Animals and Images. The point in the transition is a peculiar one; and one upon which I think it will be admitted that both psychology and biology have hitherto failed in so fitting clear views with convenient expressions as to render direct and compendious dealing with its two widely separated aspects an easy task. When we come to the further changes, to social life and conceptual thinking, we shall find them to be most readily stated in terms of a higher order of differentiations and redintegrations. But the most striking fact here is not so obviously to be thus expressed. Whatever be its ultimate analysis, it is common, in both cases, to speak of it vaguely as a kind of "inwardness." The animal, on the basis of a modified vegetal organism, with additional nervous and muscular tissues, has sensibility and intelligent activity—an inner mental life. The image, retaining the essential form of the percept, is a matter of inner experience. The real degree of correspondence involved in these statements will appear more clearly after analytic comparison[2].

[1] According to this view, the "accuracy" in which lies the special virtue of the perceptual formation consists in its suitability to survive. It survives as being a congruent factor in such a mind as is fitted to survive. This recalls J. S. Mill's observation that truth differs from error in its capacity for being re-discovered; and connects it with the profound principle that truth is *essentially* the way of life.

[2] The percept and the vegetable, which we have just examined, are both ambiguous in respect of this "inwardness." There is a fairly familiar point of view from which we may ascribe pure inwardness to the percept, and mind to the vegetable. The percept is a sort of mean between outer and inner, the vegetable between crass matter and mind. A brief analytic of this topic will also be found further on.

Probably our best clue to an analysis which shall lay open the analogies, is the idea of remoter reference to environment, which is growingly, and in the end strikingly, exemplified on either hand as we pass up our avenue.

While the general modifications which a plant undergoes must have reference to circumstances already immediately present in its environment, there arises in the animal world a capacity for making movements explicable only by reference to circumstances not here and now present. If we want an *immediate* explanation, we must say that these modifications are determined in special ways from within. Similarly, whilst perception is closely conditioned by the present state of the outward relations of the thinking organism,—in which relations we have learned to look for the constituting factors of the environment,—the workings of imagination, however related in more remote ways to this complex environment, must be immediately explained as due to inner subjective determination.

The higher we look up the scale, the more clear this correspondence appears. Ultimately it becomes expressible as determination through conscious purpose on the one hand, through ideal interest on the other.

It will be worth our while rapidly to trace on each side the stages of advance. We have a mere transitional stage in reflex action[1] on the one hand and the after-percept on the other. While these are scarcely removed from the lower vegetal and perceptual planes, they are each valuable as offering the slightest and simplest possible suggestion of the regulated independence which appears more definitely in the second stage. Here, in instinct, we have something determined according to laws more complex, and much more distinctly inward: overt conscious action begins. Against this advance on the one side must be set that to the primary memory image on the other. When, for some time after an object has been perceived, the image persists in recurring with special distinctness, we have reached something belonging to inner experience,—determined, that is, according to laws more complex, and more properly subjective: representation becomes "free." But, in both cases, stimulus from the environment plays a very evident part in the not far distant background; and the precise character of the organic or intellectual effect arising, to some extent, like reflex action and after-perception, in what has been roughly called a "mechanical" way, is to varying degrees accidental, so far as the conscious

[1] "Spontaneous" action is problematic; and while it seems difficult to conceive of any facts being adduced which could not *ultimately* be expressed in terms of reflex action, such facts could not affect the position of reflex action as the elementary type of all adaptive neural activity.

purposes of the animal, or pure ideational interests of the image, are concerned. This stage, however, merges into a third stage beyond, where,—finding an enlarging range within the limits imposed more remotely by the environment and more immediately by constitutional conditions,—the animal asserts itself according to these conscious purposes, the image according to its points of interest as an idea.

In the highest developments of this last grade we should find the culmination of that progressive subordination of organization to purpose and of ideation to interest, which we have been tracing all along. Purpose may be seen as it were darkly foreshadowed in the functioning of passive-active plants, which are matter without consciousness, yet living; and interest works implicitly in the constitution of the presentative-representative percept,—a mere object, though essentially intelligible. But as in the conscious life of animals, still immersed in material organic conditions, purpose steadily discloses itself in an efficient and supreme character, so in representative images, still with their necessarily sensuous constitution, interest begins to reveal the measure of its influence and initiative[1]. Thus on either hand we begin with a union of the ideal and the material, in which the material is the more obvious; and end with the predominance of the ideal, still under material conditions[2].

I hasten to add that I do not intend this little analytical summary as a metaphysic. If I have used convenient lumping-phrases savouring of the metaphysical I mean them to be promptly digested back into matter-of-fact.

## II.

Simultaneously on both our tracks we are about to cross the line marking the position of the human *differentia*; and with what lies beyond, as the more immediately interesting part of our subject, we shall deal a little less summarily.

I. But first we will go down beneath the nobler structures of society and reason to their bare foundations. We will examine the social germ in flocks and herds, and the rudimentary reason which the animal mind shares with the human in the formation of "generic images[3]." What degree of ration-

[1] Neither supremacy nor initiative is necessarily ultimate.

[2] Cf. the Aristotelian evolution by the progressive subordination of ὕλη to εἶδος.

[3] That the generic image should apparently be the highest intellectual achievement of the animal reminds us again that our converging lines cut that of the human *differentia* together.

ality is implied in the formation of generic images is perhaps even more vaguely understood at present than the degree of sociality involved in the formation of herds: but this will not prevent our comparison from being pursued far enough to yield sufficiently definite initial results.

From the most satisfactory scientific standpoint which has so far been found, the formation of herds is supposed to be conditioned in this way: between animals of any particular kind which have proved themselves adapted to survive and prevail under the particular circumstances of their natural surroundings in any place, there will, almost of necessity, be a very strong similarity. They will so far be prepared to act alike and together.

What forms of idea shall survive is determined, we have seen, by the necessities of the ideating organism. Now these necessities will not merely determine the general form which ideation takes in the surviving mind; both deduction and observation go to shew that they will naturally select its prevailing ideas at least, into classes of similars. For instance in the mind of the much-cited wild duck, sheets of water, its kind, various sorts of food, are judged to afford pre-eminent examples of such selection. But according to the principle with which we set out, the determinants of all survival are of the same nature. Such selection is supposed to be at work, though less conspicuously for observation, throughout the mental economy. We may therefore lay down the proposition,—which is, after all, the condition of a comprehensive logic,—that ideas will be selected to survive in like classes.

And now, given the resembling and like-disposed classes of animals, the formation into herds may follow, and help by the simple joining of their like forces to prevent their being blotted out from the face of the earth. Given like images, by fusing into a generic image they reinforce one another in a simple direct way, and together cooperate to secure their position as permanent furniture of the mind.

To sum up a perhaps rather tiresome section, which has still left one or two important complications untouched: the natural selection of specially-favoured similars, and the simple uniting of their forces, the better to secure their survival and the permanence of their type, appears both in the præ-social and præ-rational characters in which the animals seem to meet us from below.

II. Entering next upon the earlier stages of human society, we realise that however important a part variety may play in its developed constitution as we see it about us, the likeness subsisting, as in animal groups, between its members, is the more

fundamental fact. This likeness is the first condition of society. The success of any early gropings after a social life must have depended upon securing this at the outset. To some extent it may be supposed to have been secured,—and indeed we still have the pain of seeing it so preserved,—by natural selection, as in animal groups. But the production of likeness is a more complex affair in human societies. With the finer organization, and the superior voluntary powers of man, came a great increase in the importance of the tendency to specialize the development of the faculties in certain directions,—to form peculiar habits. These habits, as arising in (comparatively speaking) highly-differentiated organisms, were capable of taking very different directions in different individuals. There was a possibility of rapidly-developing idiosyncrasy quite unknown in the animal world. Hence to prevent tribal unity from being broken up through unregulated experiment in these newly-opening possibilities, man had to become what Bagehot calls "a *custom-making* animal." One standard of custom—partly at least taken from a leader—must regulate the habits of all. Otherwise the tribe will fall to pieces, and may be sought for in vain.

In the first movements of the co-ordinating reason amongst ideas, something very similar may be traced. When images are formed out of more finely discriminated sense-material, and brought under more efficient attention, special features are sure to begin to stand out prominently, in a sporadic sort of way. Groups come to be in danger of being broken up through the gradual awakening to difference. The vague likeness which lies at the foundation of a generic image is not now sufficient to secure unity. Since, then, developed specializations are here too assuming such paramount and critical importance, certain class-marks—probably first noticed in a prevailing idea of the class —must be sought for and developed by attention from amongst the features of each idea. Only so can the group be saved from falling into confusion and being dissolved away.

But further, as custom was the salvation of the tribe, so it was the safety of the individual within the tribe. He who did not adhere to customs, or who lacked the natural aptitude to follow them, had little enough chance of survival. And so, now that special marks are becoming the ground of classification, an object in which none of the selected features have been developed, or which does not even possess amongst its perceptible qualities the groundwork for such a development, is so far likely to be overlooked and to die out of remembrance.

As to the fate of the tribe or ideal group as a whole: the temporary character or permanency of any tribe's position in

the list of nations would depend upon the appropriateness or otherwise of its habits and customs to its world and circumstances. Those which most "lived according to Nature," would be the ancestors of coming States; and those ideal groups formed upon such principles as are most fitting in view of the nature of things as they have to be met and dealt with, contain the *nuclei* of future reasonings[1].

There is an important pair of corresponding facts which stamp this stage of reason and of society as essentially human. On the one hand, the preservation of a distinct mental connexion between things, on the ground, not merely of general likeness, but of likeness in selected features, demands the use of the verbal sign. This is associated with the features and helps to keep them from fading back into indefiniteness. On the other hand, co-ordination through custom can only be preserved by means of some system of outward positive institutions. These, bound up with custom, preserve it in firm outline from generation to generation[2]. Thus it is in institutions that society is articulate. Both language and institutions, it may be observed, at each stage of their formation should become the stepping-stones to higher things; both are often dead checks. For each, through its real value and necessity when fresh and living, is worshipped in "rigida mors" with a homage which is not its due,—the one being taken for logic, the other for religion.

III. Man has nevertheless made progress to higher forms of social life. Customs conceived under peculiar circumstances, and rigidly imposed on all, could not always and everywhere hold sway. Gradually the real force of the varied capacities of individuals made itself felt. And now we see it demonstrated that society finds its fullest adaptation to the world, its greatest power over nature, and its best ends in every way, only as it allows these varied capacities to develop as far as possible upon their natural lines. "The liberty of the individual"—his liberty to be what he is best fitted to be—has been asserted, and must be strenuously maintained, as the watchword of modern Western civilization.

So in reason—though the subject seems grown suddenly tame by comparison—there are a variety of aspects of individual

[1] I may mention in passing the importance of *isolation* both of communities of men and classes of ideas in their early stages, in order that the lines of co-ordination may not be disturbed before they are firmly fixed.

[2] This becomes especially important if, with the Neo-Darwinian school, we do not accept the doctrine of the hereditary transmission of habits acquired.

objects really important for us, but kept latent in the development of our ideas of them under the first crude principles. These must in the end force themselves into recognition, if reason is to have effective application to things and circumstances as they are. The secret of observation, the condition of positive intellectual progress, is the patience to let an object form its own true character in our minds. What we here call "patience" is called "tolerance" in society,—and there is little difference even in the names[1].

At the same time, since collective effectiveness is aimed at, individuals and particulars must be so far subjected to uniting principles as to secure this. Hegel has laboured on both sides of the matter, though without bringing them closely together, to prove that here is no opposition, because the unity and the true life of each and all are so essentially together that each may be found implicit in the other.

In social life, these uniting principles may be viewed as determined by those needs of society which call it to progress. Reason, of course, equally proceeds according to certain needs, according to certain determinate *quaesita*. It is for the sake of these, that abstraction is practised upon the ideas of particulars, that certain features are brought out to the comparative neglect of others; it is for the sake of those, that industries are specialized, and some of a man's faculties developed, while others are left without exercise. And while, in the well-ordered mind this abstracting proceeds according to the peculiar adaptabilities and suggestiveness of the particular ideas concerned; in the wisely-governed state each individual is led to supply the kind of need which his original constitution and his training most fit him to supply. This last principle, however, is somewhat subtle in its application: its influence can only be felt in proportion as the good order enters, as it were, into the very tissue of the state, and becomes second nature in the mind.

So far of specializing and abstraction. But as a most merciful providence has ordained that no man can ever become a philosopher, or a butcher, pure and simple, without ceasing to be even that, so no idea can ever represent a simple quality, and be. The image in itself must represent a thing: the individual must retain the concrete fulness of manhood, however modified. And here it must be called to mind that under the name formed to embody an abstract quality, concrete ideas having a number of other inseparably connected aspects are necessarily brought together; and living men with all their varieties of function are the members of the institutions in

[1] It is just a little curious that "patience," implying a suffering, is more *subjective* in tone than "tolerance," implying a bearing.

which specializations are found embodied. But while it is through language, name-systems, that we reason, it is through the systems of institutions that we legislate, or progressively construct society. And here, forgetting the things, forgetting the men, we run on the one hand into contradictions, and on the other hand into what Comte truly perceived to be essentially anarchy. It is the bane of ratiocination, logicians tell us, to treat names representing but one or few aspects of things as if they comprehended the whole. And over-eager social reformers at one pole have still to learn what the older political economy used to ignore at the other: that each of the institutions with which alone we can directly deal in legislation necessarily touches but a few sides of human nature, and our summary dealings upon these few sides may force us into innumerable and possibly fatal complications in regard to the rest.

Individual life, then, is not to be lost sight of in social life. But more than this, society has for its great end the evolution of the true individual. We now understand in psychology that the full idea of individual objects as such is only reached as the crown of widely-based processes of conception. And the individuality of manhood is not fully realised in those vaguely homogeneous units which compose the lower social systems: the individual can be emancipated, can gain his own life, only through the progress of society. And this, we say, is the end of society. Society fails miserably, whatever be its collective force,—and its tissues will speedily ossify,—if it tend not to the complete development of free, healthy-minded men and women; for theirs, after all, are the real lives. It fails: as surely as reason misses the mark when it does not help us to form truer and fuller ideas of the individual objects,—on which alone we have really to act in daily life.

But finally, just as reason, while making individual objects richer in meaning and possibilities to us, through connective forms of knowledge, modifies their impressions upon us, so as to rob them of a good deal of their peculiarity[1], so society, causing men and women to realise their completeness only through their fellows, demands the sacrifice of a good deal of idiosyncrasy, that they may reap reward through the advancement of all. And on the other hand, the more a man realises with how much his life and life-work can have nothing directly to do, the more he realises that *solidarité* with his kind, without

[1] We all know that, as compared with a man who has cultivated a dredging-net sort of memory merely for particulars as they occur, the man of science and the philosopher are little tenacious of the non-significant and disconnected details of things and events.

which his work has no more purpose or completeness than an isolated particular has meaning. And a life that is kept fresh at the roots may become broader through the very faithfulness of its devotion to its special objects: especially in that the varied experience, the hopes and sorrows and joys, of kindred spirits, strenuously working in other directions, become its especial heritage through sympathy,—the enriching associative bond.

IV. Throughout what has been said the progress of society has been implied. It must further be briefly noted that when the general form of this progress comes to be analysed, it discloses its appropriate analogies to the progress of conception. A sustained advance and indefinite development of its own is characteristic and distinctive alike of social organization and conceptual thought. Apart from the maturing and passing of individual lives, apart from that development of the race as a whole which is represented by changes in successive organisms in the course of a cosmic age, social organization has a progress dependent upon its own inner relations. And in like manner, apart from the forming and fading of particular images, apart from that general development of imaginative power which may be manifested in the images appearing at different periods in a mind's life, thinking, so far as it takes place at all, is an advance from thought to thought. Nor is it an advance of mere succession,—it has an evolution of its own, dependent upon its inner concatenations.

Of course, in laying emphasis upon the progress of society, one must not forget that many human communities are as stationary as those of the ants. These, however, have been properly regarded as cases of arrested social organization: the fact is that it is no longer going on. And does not the state of a large part of our convictions imply arrested thinking in the same way? But, further, just as our thinking, under the pressure of experience, is on the whole progressive into a widening consistency, so the history of society, in its struggle with nature, is a history of advance into more extended and comprehensive forms of *solidarité*. To-day, whilst boundaries between the sciences, once rigid and impassable in our minds, are being moved and broken down, free communication begins to spread to the ends of the earth, and the life of nations intermingles in a way undreamt of in the earlier world. It must be added that while the principles of the more advanced sciences are being applied,—sometimes fitly, sometimes not so—to those that have lagged behind, the higher nations are endeavouring to force their methods on the lower,—with varying justice and success.

Our pursuit of analogy here ends for the present. But two closely connected topics call for a brief review. The first of these is that of discrimination and assimilation. Psychology has only recently awakened to its subtleties, and is only beginning to trace them through the different grades of intellectual elaboration. I have not ventured, therefore, to come very near them in passing. This much, however, is made plain: that ideas are first developed by a process of differentiation carrying resemblances with it, as I have described, independently of the higher processes of discrimination and assimilation, which involve definite consciousness of difference and likeness. I should be disposed to compare the development of this, as demanding a degree of representative power that would be necessarily concomitant with power to imagine, to a development of conscious affinities and otherwise, necessarily concomitant with animal life; and I might compare the clear, predominant consciousness of similarity, upon which conception must be based, to the "felt union" which it may be remembered that Bagehot lays down as the necessary condition of social life. I doubt, however, if the materials exist for a closely concatenated comparison.

The subject is further obscured, moreover, by a great characteristic difference between cosmos and microcosm, which must form our second topic. This is the difference in the definiteness of the lines of individuation in the two. I have assumed mental individuals, called objects, as psychologists must. But the "object" is exceedingly hard, too hard, to fix. We can say much more distinctly what constitutes a single vegetable (though this, too, has its difficulties), than what constitutes *a single percept*; and at the point where imagination enters into comparison with animal life, in which individuation is so far intensified that each individual has a separate consciousness and conditional initiative, the difficulties of shaping detail within the "transparent unity" of mind are such as to make it impossible to distinguish at present how far the analogies may go. This fluidity of mental individuation perplexes us throughout, and affects the relations between the different grades as a whole. Whether regarded upwards or downwards they are plainly much more direct within the microcosm than in the wider and more varied cosmic sphere. That definite correspondences can nevertheless be traced in general typical outlines is what I have sought to bring out.

And now, having set forth, and endeavoured to clear up, this whole analogy, I daresay I shall be expected to finish by erecting a metaphysical demonstration on the basis of it, proving, by irrefragable dialectic, that the implication of mind

in one set of phenomena further involves a cosmic mind in the other set. I shall do nothing of the kind. I gladly leave it to any who have a taste for sitting over tangles and tying a knot in one part in the act of undoing one in another,—at the same time begging them to remember that for the interpretation of phenomena as mental we are now finding it desirable to give a more and more highly attenuated meaning to "mind" in the abstract; and that the little meaning we can scientifically attach to the term depends largely upon those very peculiarities of individuation for which we can find no analogy.

But if as much as is here instituted should in the end be established, what would be its true use? The value of such co-ordinations is estimated most certainly through the pursuit of them. It might appear that advance on either side would be doubled through its reflection, and carried further through its reactive suggestiveness, upon the other side; and some value might come to be attached to the double means of defining problems. Nor would the fascination which the microcosmic idea has always possessed be likely to be without its efficacy as a stimulus in research. Finally, if the principles of the enquiry which I have here followed up for a short space should find acceptance, this may indicate the duty of pursuing it further, in a not unreasonable and not altogether indefinite hope of being led to something which, if not metaphysic, may be at once better evidenced and deeper in its ministry to pure intellectual satisfaction than metaphysic has ever been.

## IV.—KNOWLEDGE.

By Walter Smith.

It would not be easy to find a better statement of the general nature of knowledge, than that which is suggested in Aristotle's definition of truth. Truth is the agreement of thought with reality. This is not, indeed, a definition of knowledge; but truth is the ideal of knowledge; and therefore we may legitimately paraphrase the Aristotelian dictum thus: Knowledge consists in thoughts which agree with reality; it is the reproduction in the mind of the object. There is wonderful unanimity among philosophers in regard to their use of the term knowledge, though its meaning has been rather an unnoticed presupposition of their thinking, than something explicitly determined. This conception is the foundation of the Idealistic structure. Those who deny that ideas agree with things generally declare plainly that knowledge is impossible.

It is the purpose of this inquiry to determine what elements must enter into a cognition that it may be a reproduction of the object. The following questions fall to be considered: Do the data of the senses, tried by the standard we have set up, constitute knowledge? Or, is it the so-called categories that furnish knowledge? Or, if both of these are found wanting, has consciousness other resources?

It may seem that all these questions have been more or less completely disposed of by such theories as Agnosticism and Idealism. Thus, Agnosticism denies the possibility of a knowledge of the real universe. The whole matter seems to be settled: without doubt that which is regarded as knowledge is not such in any strict sense. Yet the Agnostic will admit that there is a mode of existence, which is entitled to be regarded as real, and which we may know in a quite absolute sense. That is given in our states of consciousness: there are states of consciousness, which are cognitions of other states. In what forms such a cognition is worthy of the name, is as much an inquiry for an Agnostic as for others. We might restrict our inquiry,

though to do so would be more uninteresting, to just such self-knowledge. It is probable that the agnostic would allow the extension of the inquiry at least to the knowledge by the individual of the states of others.

Again, the Idealist has wrought out a theory that seems at first sight to meet all the necessities of the case. He teaches that there is no reality independent of spirit, to which mental states should correspond. The act of knowing and the thing known form an indissoluble unity. But it can readily be shown that, in the present inquiry, no particular satisfaction comes from such Idealism. It would in this general form be inadequate, even were the position of solipsism assumed, for it does not determine what is implied in knowledge by an individual of his own past states. But few, if any, Idealists would so restrict the investigation: the absolute, they tell us, is revealed in many individuals. Each of them, it follows, has its own experience; each exists for itself. It cannot be known to another as a state of that other's consciousness; its *esse* is not that other's *percipi*. Accordingly the question raised in this investigation presses upon the Idealist as upon others. What is implied in the mind's cognition of past experience or of the experience of others? The question is not less pressing when attention is turned to orders of consciousness other than human. Do our sensations or our categories disclose to us the life of the animal? It might seem that the material world could still be sublimated into a state of consciousness, but probably it is our profound ignorance of that world which emboldens philosophers in such speculations. It may be that that world will give evidence that it can be so sublimated as little as any other. And thus, regarding it, the same questions would arise.

If then there is need, under any system, to ask the questions proposed at the outset, the answer may be offered to the first, that the data of the senses are not, in the proper sense, cognitions. Proof of the proposition is scarcely necessary. It will scarcely be maintained by any one that sensations resemble things. At the most, it may be claimed that in sensations are given certain elements which are ordinarily regarded as conceptual, or relational. We shall presently deal with these elements, and their relations to reality, and we need not here take further notice of the view that they, or some of them, are from the first inseparable from sensation. Sensations apart from such relations are our own subjective states; the sweetness is not in the apple, apart from our sensibility; it is not a thought that is a reproduction of the object.

There is, indeed, universal agreement that all our knowledge begins with sensations. The data of the senses, external

and internal, are its only foundation; it can lay no other. 'But at the same time, this abstract subjectivity must be transcended, if the object is to be reproduced. The mind must interpret these subjective feelings, and create an object which may give these sensation-signs significance.

This brings us to the question, are the categories the creation of the mind, which is worthy to be entitled cognition? The distinction between what is conceptual or relational, and what is sensational, is of very great importance. But even the 'higher' mental elements, it will be shown, do not constitute cognition. The concepts, or categories, or laws of science, are not knowledge.

Much philosophical labour has been devoted to an investigation into the origin of these categories. It has been maintained that some of them at least, are not due to experience, but are the original furniture of the mind. It is more probable that all concepts owe their origin directly or indirectly to induction. Still this is an investigation which does not concern us here. The inquiry is, not into origins, but into values. Whatever their origin, the categories are not cognitions.

The grounds for this statement may be seen most readily if we consider some of the categories of Science. One of the most elementary of such categories is that of Quantity, which may present itself in the form of space, or in the more abstract form of number. It is, in one way, one of the most comprehensive of the categories. It is very remarkable, in the history of science, how mathematics has extended its sway over the sciences. One after another has yielded. But by its surrender each has apparently secured stability; the evidence of its identity with the other sciences, already annexed, seems indubitable; accuracy and demonstration take the place of vagueness and conjecture. Science is sometimes said to begin, when its facts can be stated mathematically.

It is useless to quarrel with this state of things, in consideration of what seem spiritual interests. In truth, now that the tendency of science is plain, one is rather disposed to think, as men have sometimes done since Plato's time, how natural it is. Since we think the world spatially, and all things in relation to space, it seems obvious that everything must have its mathematical value. But when we ask whether we are gaining any knowledge of the inner nature of the things we are so numbering and measuring, we need not reflect long to see that that is not by these operations revealed to us. The plant or animal examined under the microscope, so that its minutest structure is seen, contains a secret to which the observer is, so

far as such observation goes, an absolute stranger. To say that a particle of matter moves, with the velocity of one foot in the second, gives no conception of the inner nature of the body, or the inner meaning of its movement. The law of gravitation tells the measure of that force's action; there is truth in the common remark that it does not tell us what the force itself is; to no mathematical calculation does that mystery yield. It might not be too much to say that, while the forces of the universe are related to space, they are not spatial, and, apart from their relation to space, mathematics does not apply to them. It is at once seen how inappropriate it is to apply mathematical terms to mental realities; we cannot speak of the extension of a thought, or an emotion. It may prove to be equally inappropriate to apply mathematics to what is called physical energy, when that is considered in its proper nature.

It may be added that mathematics does not even reveal space to us. If space is real, it has a being which is most surely not disclosed in geometrical propositions. Those, moreover, who point to the antinomies connected with the conception of space are dealing with abstractions, not with what is concrete.

Another of the all-comprehensive categories of science is that of causality. It is also one that has more of an immanent character. The externality of quantitative determinations of the world has disappeared. This category stands on another footing. The cause is related as cause to the effect, by virtue of some intrinsic quality of its nature, which is embodied in that relation. It might seem therefore to be more truly a part of knowledge.

The criticism, which it first suggests, is that it is abstract. The concept is treated as if it had application to the whole universe, and had, in all its applications, practically the same significance. It is one form of connection which is generally thought to hold among all the phenomena of the material and moral universe. But when we turn to the concrete world, we find what a pale abstraction has been taken for the reality. It would be safe to say that, in the world of actual things, there is no relation which is repeated. All things are in flux, as Heraclitus said. All relations are likewise in flux. There is not the slightest reason for thinking the causality the same, when the sun raises the tide, when the spark explodes the gunpowder, when the lightning cleaves the tree. There is, further, no reason for thinking the causality the same, when two trees are struck by lightning; we are compelled to think the opposite. The causal concept is a mere generalization from our experiences; it is a compromise among them. It cannot be

regarded as an identical element in them, for it does not remain identical. Our concept holds of one case, at the best; probably it holds of no case at all. We have called it an abstraction, but it is scarcely entitled even to this name. If knowledge means resemblance to the reality, it is not given in this concept.

It can be clearly seen how far such a concept is from the living energy of things, if we consider, for illustration, human experience. Joyful tidings are followed by rapture; sorrowful tidings by grief; how far is the consciousness of the man, who passes through these experiences, measured by the scientific statement of the facts, in terms of causality? There is nothing in human experience, which resembles the idea of causality, except in so far as that category keeps the imagery of sensations of strain. In proportion as it becomes more purely a thought-relation, it becomes foreign to every living experience.

It may be said that the category of causality is merged, for modern science, in that of energy. Causal relations mean transformations of energy. The change does not directly help much. There is only provided another abstract universal. What actually exists is, not bare energy but energy in some particular form, heat, life, electricity; and even these are general names for particular phenomena. The criticisms passed on causality apply with equal force to energy. It does not any more than causality resemble any reality we know. Neither does it represent an identical part in a multiplicity of forces. Energy is not *a part* of heat, or electricity.

We may pass in review higher categories. There are concepts which commend themselves, as more fitted than that of mechanical causality to represent the spiritual process, and the universe as a whole. It may be said *e.g.* that the soul is to be conceived ideally, as self-realizing, not as a product of other forces, and it may seem that a statement of the facts, in the light of such a principle, renders them "intelligible." Yet it does not afford the knowledge sought after. This category fails like the category of causality. It has the fault of abstractness. Further, as a mental representation, it has nothing of the warm life of the reality, its agonies, joys, hopes. It scarcely resembles it more than $x$ and $y$ resemble the realities which they symbolize. It might have been expected that self-knowledge, at least, would be adequate knowledge. But the course of science has been such, that there is a gulf between Psychology and human life. It has often been remarked that psychological analysis destroys the capacity for the feeling, which is studied; it is a curious illustration of the breach in this sphere between knowledge and its object. Physiological Psychology has been designated a 'Psychology without a soul,' and, to many, the

designation has seemed to brand it. The Psychology that calls itself introspective is, in as fatal a way, a Psychology without a soul.

Similar criticisms might be passed on all the categories of Science and Philosophy.

But it is claimed that Science has to do only with universals. The foregoing criticisms seem to have sprung from the notion that Science has to do with the concrete reality. But Science takes interest in the concrete reality, only as it is thereby enabled to reach the laws embodied in it. It is not the empirical data, but the relations weaving them together, that it values. It is not to be denied that this is the commonly accepted account of the task of Science, including Philosophy. Were we, however, to concede this, we should be obliged to say, either that Science is not equivalent to knowledge, or that there is a large part of existence which is left out of its reckoning. It may be that the part of the universe, which it fails to appreciate, is the most interesting. In any case, it misses it, and so far fails to be knowledge.

Moreover, it misses the treasure poured at its feet, in order to lay hold of shadows. For, in the strict sense, it does not know universals, in so far as they are prior to, or apart from experience. It knows them only, at the best, as they are in experience. What they are apart from an experience like its own, it cannot know; for, to know them, it must translate them into experience. When it pretends to isolate them, it is only changing them from one mode of consciousness into another. We cannot step outside consciousness; we cannot know universals apart from experience. To say that our Universals, our Ideas, our General Laws are like the reality that transcends experience is like saying that we can tell colours in terms of sound; yet the illustration may be much too favourable to such a view. It is impossible for us to say that there is in the Absolute anything that resembles our universals. If we should venture on such statements as that the absolute includes these universals, as it includes all our activities, we yet should be far from saying that it is revealed, in its inner Being, by such universals. Such universals or categories are, as Kant insisted so often, the resource of a discursive intelligence; and for an intuitive Intelligence they might be altogether without the significance they have for us.

The view of some Hegelians might be appealed to. It might be urged that we know these universals only as in experience, that we never really separate them from experience, but only, by abstraction, consider them by themselves. The presupposition of this theory is that the only concrete reality is

given in self-consciousness. However, even were this granted, it would remain true that abstractions, from their very nature, cannot represent the concrete reality. But, in truth, this theory mistakes the true function of universals. It considers them only as entities found in reflective thought, not as attempts to know an object. While we consider simply *our* combination of things by a concept, the theory may seem plausible. We have joined *a* and *b* by the causal nexus, and we may abstract the category. When, however, we turn to the object, we see that the categories cannot be regarded as abstractions of this kind. There is *e.g.* an experience of the lower animals, which is not reflective, and in which, presumably, the categories, as thoughts, do not emerge; reflecting on it, we frame an abstract category. It is apparent that we have here an abstraction, to call it such, which is not of the order to which the theory says we can restrict ourselves. Far from being of such an order the category is produced as an explanation or representation of the object. Similarly, the universals which are regarded as giving the synthesis of human experience are those of which we are not conscious in the process of that experience; they are not abstractions from that experience; they represent attempts to know the mind as a thing in itself.

In his work, *Appearance and Reality*, Mr Bradley says that ideas are abstracted from the reality, and do not fully represent it. He even says that the Absolute is not pure thought. Nevertheless, knowledge of the Absolute is possible; the knowledge, even though abstract, is true. Mr Bradley offers no justification of this use of the terms, Knowledge and Truth, and the consistency of his statements is not apparent. There seems to be a somewhat similar contradiction in Professor Royce's brilliant work, *The Spirit of Modern Philosophy*. It is said that the categories of description do not reveal the inner nature of things; that must be 'appreciated.' At the same time it is maintained that we have a knowledge of the Absolute. But no reason is given why the categories of this absolute knowledge should be regarded as standing on a different footing from the others. They are still 'descriptive.'

What is the function of universals? Are they valueless? Probably they have a utilitarian origin. It is useful to the animal and to man to associate properties together. On the utilitarian basis, it is true, an intellectual structure has been raised. The concept has been an essay towards knowledge. But it has never been a successful essay. Its utility on the other hand cannot be doubted. It has the utility of a sign or symbol.

So far as our practical purposes are concerned, we do not

need to go beyond a set of signs or symbols. By their means we can sufficiently determine the relations of things to each other and to ourselves. If what we wish to know is the number of pounds a steam-engine will lift, or the number of miles a planet will travel in its orbit, it matters not that the sum is calculated by algebraic symbols, which serve equally well for measuring quantities of an altogether different kind. Again, to say that one thing is the cause of another, indicates a fixed relation of succession, and the concept's importance for our welfare is very great; we know in what order of time to expect phenomena, when once we have made this causal arrangement of them; we know how to produce pleasure and ward off pain. Any doubts that arise as to the value of the concept for knowledge are, from the practical point of view, irrelevant.

The concepts have their utility also for the intellectual life. They abbreviate the process of thinking; the mind can, by their help, pass quickly to the result desired. They bind the ends of the world together. They take for us the place of absolute knowledge. Our minds are finite; they are "discursive"; their experience is fragmentary. But by these concepts they have so related the elements of the world, that they can pass to any point, and, where they will, enter into more intimate acquaintance with reality. The meaning of this will be better understood later.

We conclude then that while our concepts, or categories, or Laws are useful, their utility is that of symbols. Berkeley says that language is a kind of Algebra. Prof. James says, that "it makes little or no difference in what sort of mind-stuff, in what quality of imagery our thinking goes on[1]." We may say that a number of thinkers have had the same thought, but "it would probably astonish each of them beyond measure to be let into his neighbour's mind, and to find how different the scenery there was from that in his own." The trouble is that Science and Philosophy treat symbols as mirroring reality. Algebra, however, is not knowledge of an objective world.

It may be necessary to guard against a possible misunderstanding. Prof. James quotes Mr Lewes, who says that "philosophers carry on long trains of thought without pausing to translate their thought into images." It might be supposed that it would correct the errors of pure thought, to awaken in the mind a sense-image. But an external image of the object is not knowledge of it. We have seen that to have the spatial form of an object is not to have knowledge of it. It does not help matters to have that form painted with colour. The visual

[1] *Psychology*, Vol. I. p. 269.

image that arises in the imagination, gives us, at the best, only the most external characteristics. The visual image of a man is not knowledge of the man.

This brings us to the question whether there is any other mode of approach to the world, than that which is offered by Science. We find that there is the approach through sympathy or imitation. Art especially uses this access to reality. We have, therefore, to estimate its success in its effort to enter into the being of things.

Art is, in part, utilitarian; it ministers to the gratification of the senses. Harmonies of colour and concords of sweet sounds are by themselves sensuous. The arts which deal with such materials do not necessarily bring man into touch with objective nature. Much of æsthetic delight in nature is widely different from love of nature. Many people have found that they can get pleasure from autumn tints, or from songs of birds; they do not therefore love nature. They simply enjoy their own sensations.

There is however another kind of art which is more objective. It is probable that the theory which would explain all art as simply pleasure-giving is defective. Schopenhauer erred in not properly recognizing the sensuous element in art. But his work, in drawing attention to the objective interest of art, has permanent value. A complete theory of art must probably take account at once of what is subjective or sensuous, and of what is objective. It scarcely concerns us at present to vindicate at greater length this theory of art, provided it be conceded that art, for whatever reason, does call for a large and catholic exercise of the sympathies. It is art of this kind which yields knowledge. The drama is a good instance of such art. He who reads it, or sees it enacted, does not consider primarily whether he is having pleasant sensations. He has, for the time, taken on him the burden of the *personae;* he suffers with them and rejoices with them. May we not further say that he knows them? They are known to him as they are for themselves. Surely there is here a closer approach to the "Ding-an-sich" than science knows. Compare a dramatic representation, *e.g.* that of *Macbeth* or *Richard II.*, as it is found in the plays of Shakespeare, with the account given by historians. In the ancient chronicles, the incidents are mentioned in their proper order: their time-relations are noted; more or less is done to trace causal connections. The scene tends to assume that calm which is always found, when the categories of science have sway. There is little suggestion of all that formed the actual experience. This is more noticeably the case with modern history, which has carried still further the differentiation from

the epic. All suggestion of personal interests is eliminated, as far as possible. The characters of history are reduced to $x$'s and $y$'s. It is not thus that the dramatist deals with historical incidents. The characters are such as they actually were on the earth; we feel their passion. Macbeth is not a name for some phase of barbarism, which, again, equals $x$; Richard is not a symbol for some epoch of monarchical government, or something similar, which in its turn equals $y$. They are living beings. Is it the poet, or the historian, that knows the history of these men? It is surely the poet, whose 'idea' most nearly accords with reality. Carlyle perceived this, at least in part, when he wrote, "The thing Shakespeare looks at, reveals not this or that face of it, but its inmost heart and generic secret; it dissolves itself, as in light, before him, so that he discerns the perfect structure of it." "To know a thing, what we can call knowing, a man must first love the thing, sympathize with it." Poetry is truer than history, it has often been said, the reason being that it gives an ideal completeness, that history fails to exhibit. There is a further reason for regarding poetry as truer than history. Even where it is not careful to follow facts in the precise order and form of their occurrence, it is yet presenting the true objective conditions of the lives that it contemplates.

The comparison of history with the drama is specially valuable, because the material with which both are dealing is a mode of existence that is like our own conscious life, and can be interpreted in terms of that life. The knowledge is not exposed to the agnostic criticism, that it is a mere play of symbols. One consciousness can reach the 'inmost heart' of another.

But poetry and other arts have not restricted themselves to human experience. They have tried to interpret the lower creation. As Schopenhauer is fond of telling us, the same living Will which is in man is found in the lower animals. Even more than the Poet, the Painter and Sculptor have sought to suggest this kindred life. It is also worth while to notice that in ordinary thought and speech, in which there are often evidences of that sympathy that is the source of art, there is a like construction of the animal life. Plant life has been similarly interpreted. Emerson quotes somewhere, the painter who said that in order to paint a tree, you must for the time be a tree.

Even the material world is, in the eye of the artist, a world that is living rather than dead. The name of Wordsworth deserves to be mentioned in connection with all such interpretations of the humbler forms of existence. To him the belief that the flowers 'enjoy the air they breathe,' was more than a lyrical ecstasy. In stars, clouds, "stationary rocks" and "moving

waters," as well as in the domain of organic life, he finds "Spirit."

It can be seen how widely this kind of interpretation of nature differs from the abstractly scientific; yet it may be claimed that it has more of truth in it. Even Science seems sometimes to transcend itself, and approach it: it has been alleged that work in the physical laboratory enlarges the sympathies.

There is one science which offers an instructive illustration of the two methods of interpretation, inasmuch as it seems to demand the adoption of both of them. The science is Psychology, and the illustration it affords deserves a careful statement. Psychology is physiological, and it is also, to use the common name, introspective. It is its aim, so far as it is physiological, to state all its data in terms of nerve-movements. It is believed that this is possible, and that if the statement should never be complete, the cause of the failure is to be found in the coarseness of our methods of observation, or in some more or less accidental obstacle. Thus our thoughts, our volitions, our feelings represent to the physiologist so many movements of nerve-molecules. Introspective Psychology deals with the same facts of thought and emotion, and if it has not been able to apply all the methods which make the results of physical science so accurate, it can at least claim that its facts are facts of experience. The thought and the emotion are as we feel them. Thus we have two orders of facts, the physiological and the psychical. How are the two related? Psychology, however unsatisfactorily it has treated facts of consciousness, has, at least, usually insisted on their difference from what is material. There is no resemblance between the conscious feelings and the molecular movements in the nerve-cells, and it has seemed impossible to regard the one as the cause of the other. It is common to say that they are distinct species of existence, and that they form a parallelism in which there is no interaction; mind-action accompanies brain-action without affecting it, or being affected by it. It may be doubted whether such a theory is in any way satisfactory. After all, when we are looking at these movements of brain-cells, what right have we to call them material? That which we actually get, is what might be called space-symptoms of something. It may be we are simply blinding ourselves with words, when we talk of this something, as matter, or energy. May it not be thoughts? May not they have space-symptoms? As we look at the brain, we have sensations spatially arranged; the reality which these indicate may be simply the consciousness familiar to introspection. The insertion of energy between these space-symbols and consciousness may be entirely super-

fluous. "Here," says Professor Royce, "in my world of daily experience, is my friend. If one saw him through and through, one would ultimately experience as the describable physical facts about him,—a quivering mass of molecules. Especially complex with intertwined spirals and streams of multitudinous molecules, would be each of the many tens of millions of cells of his brain. Thus my friend might be found. Nay, I have as yet found him not at all. I did not mean this maze of molecules, by my friend. I meant his intelligence[1]." He explains the physical appearance by saying, that it is "simply the way in which the true and spiritual self must needs appear, when viewed by a finite being, whose consciousness experiences in the forms of our space and our time[2]." It may seem that we have chosen for illustration what is speculative and problematical. Now the main thesis propounded could be established without reference to such a theory. But the problems of Psychology bring this question of the nature of knowledge prominently forward, and such a theory as that indicated would be an interesting confirmation of what has been evidenced by a study of consciousness, under the guidance of introspection alone. It is readily apparent that the theory has wider applications. It may be that all so-called forces must disappear in forces that are like our consciousness. The only energy that we know, in its 'inmost heart,' is the stream of thoughts and emotions, which constitutes our mental life. It may be that all energy belongs to the same genus. When we look at what is called matter, we have only sense-signs. In our conscious experience we have the reality, for that experience *is* the reality; and it may be that matter should be interpreted according to the only reality we know. The theory of mind-dust may also be mentioned here. It is a kind of materialism baptized into idealism. According to it, the atom has a soul, or is sentient; and the higher intelligence is simply a product of a complex combination of these soul-atoms. The relations of this theory to the double-aspect theory indicated above need not here be discussed. Yet it is important to observe its idealistic or spiritualistic interpretation of material things. Idealism in this form may be crude. In all its forms it has, as a Metaphysic, been hasty and presumptuous. What here interests us is to observe in what various ways men are brought to interpret things after the analogy of their spiritual life. The world as we look on it and touch it, claims to have affinities for conscious life. And it naturally follows that a full understanding of it, if it is to come at all, can come only

[1] *The Spirit of Modern Philosophy*, pp. 405, f.
[2] *Ibid.* p. 411.

by that imitation and sympathy by which we understand our fellow-men.

The question may be asked, what are the relations of science and art? Should poetry *e.g.* increase and science decrease? Scarcely; at least the kind of poetry that should increase should be determined. Much poetry, that is deemed most beautiful, has no concern for truth. Even when not lyrical, it is arbitrary and fantastic.

Might we not say in truth, that one of our greatest intellectual wants is a new poetry, one that is not a mere opposition to science, but that follows the work of science and supplements it? Poetry should be freed from its vagueness, from its unjustifiable associations. For its own sake, it cannot afford to be careless. It should learn the lesson that science teaches of minuteness and scrupulousness in dealing with facts. Over the schools of the Poets, the words should be inscribed, "Let no one enter, who is ignorant of mathematics." In its construction of the world, it should exhibit the precision of science, but it should, at the same time, follow its own special method of interpretation. Where, to science, the reality is a realm peopled only by $x$'s and $y$'s, it might know things in themselves. It might afford an approximation to the Kantian "Intuitive Intelligence."

Science and art have often been treated as distinct; but it may be that this is to separate things whose conjoining is necessary to the integrity of human life. From the beginning it was not so. The earliest life of man, that of the animistic stage, was, in a sense, a life of poetry. The physical things around man were creatures like himself, to be punished or conciliated. Such a life cannot, indeed, be regarded as other than rude. It showed little sympathy; fear played a large part among its motives. Yet in its rude form it possessed the germs of a unity which should in a complete form be possessed by us, the unity in which the symbols of science are supplemented by the revelations of poetry.

More profitable than consideration of this primal life of man, is a search for the faculty, which is the source of knowledge and art. Imitation is a subject which has in the past been largely ignored by psychologists, though attention is now being turned to it. It seems to be the basis not only of science and art, but of a large part of morality. In the primal life of animals there is no concern for the objective. An animal sees food, rushes to it, smells it and tastes it. In the sensations of sight, of motion, of taste, there is, as we have already seen, nothing that reveals to the animal anything objective. This system of sensation-signs may become much more complicated without the transition to any higher mental stage. Even in human life, in complicated

actions, there is much of this mere play of feelings. Suppose that a man feels pain in his outstretched hand, and cries out; the pain reveals nothing of the external world; the outcry may similarly fail to indicate acquaintance with anything. It is very important that the exact value of this kind of mental life should be recognized.

But, in the evolution of the mind, there came a time when a more intellectual life dawned. When and how imitation started, are questions which can be settled only by careful historical investigation. They must, however, at present be passed by. It is sufficient here to indicate the general nature of the faculty. On analysis it proves to be a special case of association. Suppose that a man sees the wound in his hand, and feels the pain in it, wound-vision and pain-feeling are associated in his mind. There might be further associated with these the cry of distress, and the withdrawal of the hand. Let him next see a wound in his neighbour's hand, the pain-feeling, resembling the neighbour's, might be revived more or less vividly; and there might also be, at least in their incipient stages, similar movements of the muscles employed in calling out, and in moving the hand. The association does not necessarily take this course. In certain conditions, a man, at the sight of his neighbour's wound, would consider him weakened and so rendered an easy victim, and would proceed to slay him. But where the association in the mind is a counterpart of an external connection or association, there is Imitation. The above illustration may not exemplify the origin of all Imitations. What is important, is the conclusion it yields as to the relation of the internal association to the external. The experience of others is copied. In Imitation the narrow subjectivity, the abstract self-reference of the animal's primal life has been transcended.

Almost all the higher functions of the spirit are found, as has been remarked, to depend on the faculty of Imitation. The benevolent virtues take their rise from it. By means of this faculty it is possible to carry the sorrows of others: sympathy is, literally, suffering with. In other respects also, morality is imitative; it may take the form of imitation of an example; or, it may be imitation of the ideal man, that does not exist, except in imagination. Further, it is by virtue of Imitation that morality finds its greatest inspiration in the relations of concrete individuals. Examples fill men with enthusiasm, when moral precepts leave them unaffected. Sidney, in his *Defense of Poesy*, claims that in moral doctrine the poet "doth not only far pass the historian, but for instructing is well nigh comparable to the philosopher, and for moving leaveth him behind him."

From all this it is evident that morality, apart from the utilitarian effort implied in it, is not widely different from knowledge. "To know a thing, a man must first sympathize with it, love it." In his *Social Evolution*, Mr Kidd represents benevolence and intellect as opposed to each other in their effects. This is because the intellect is taken abstractly. When knowledge is at its truest, the opposition disappears. But, it should be added, morality forgets its own significance; it degenerates into obedience to a set of laws; even benevolence for the most part treats life as an algebraic problem.

Art, in many of its most important developments, is a growth from the root faculty of Imitation; it reproduces or copies the object. Should the claim be made that, in some cases, art, like morality, idealizes, it may be said that it is still realizing the object in its true being, but that the object exists only as a creature of the imagination. In art there has been remarkable fidelity to the principle of Imitation; it has many of the characteristics of science; in many important respects it meets, as we have seen, the claims of knowledge. It is by virtue of such fidelity that it gives so true an interpretation of human experience. It has shown, at least, the same spirit of fidelity in its interpretation of the inorganic world. Yet the power to produce pleasing effects is one which it has often cultivated, at the expense of truth; and many of its productions are 'begotten of vain phantasy.'

It is science that has, with most distinct and conscious purpose, set itself to imitate the reality. Its ideal has commanded the most faithful service. But the failure of science is apparent. Science devoted itself to the development of the general notion. It was in Greece, the land of art, that a principle antagonistic to art was developed. The leadership in this movement was assumed by Socrates and Plato; for while the notion had been employed by the thinkers before them, they were the first to exalt it to the supreme place in Philosophy. It is not difficult to see how its importance was magnified in their eyes. It was that which was stable and sure, while the things of the world were in flux. For Plato especially, it was the Absolute Being; the system of notions constituted the eternal and Absolute Being, that is incarnated in the world, yet is before it, and transcends it. Philosophy has ever since been largely under the spell of these great masters. Since the time of Socrates, as the history of philosophy tells us, it has been the task of science to establish general conceptions.

Concepts are unable to give us knowledge. Knowledge is imitation of the reality, and concepts do not imitate the reality.

In order to knowledge, Imitation must be perfect. The method of science must give place to a new method. We can now, however, better understand the precise value of these concepts. It has been already said that they, in a sense, represent to us absolute knowledge. It is not meant that they disclose the Absolute. We cannot even fall back on the category of existence, as predicable of the Absolute, for as ordinarily used, it does not apply to anything we meet with, and it would probably be mere self-delusion to apply it to the Absolute. The categories, as attempts at cognition, work out their own perdition; they hasten to their own Nirvana. It is often urged that, even to discredit them, we must employ them. It would be more correct to say that intellectual suicide would be the result of their consistent employment. We cannot negate their failure by continuing to use them. They are to be regarded as symbols; and, as symbols, they commend themselves as reliable. They can conduct the finite mind from one part of the world's experience to another. While it is true that the reality is always other than that given directly in the symbol, it is also true that the symbol is a clue to guide a mind that is finite in its experience from one reality to another.

There is one case of the employment of the categories which may demand a word of explanation. The play of categories in the mind could only be known, if mirrored by categories like them. Yet even in such a case, if these categories are strung together by another lower or higher category, the reflection is being distorted. Symbols and realities are mixed.

It may be well, before we conclude, to call attention to the limitations of our faculties, in applying the method of knowledge which has been explained. We seem to have gone on the assumption that we can reconstruct our own past experience with its original colouring, and that by sympathy we can reproduce the lives of others. Yet can we really recall our own experience? The illusions of memory are pointed out by the most elementary Psychology. "Wahrheit und Dichtung" are inseparably blended. We are not as we were when we had the experience, and the memory is affected by the new experiences that have crowded upon it. It is still harder to appreciate aright the lives of others. The difficulty increases as we try to understand the soul of the lower animals. Can we lower ourselves into that life, and make its interests, even temporarily, our own? Art has not attempted to a great extent to do this. Painting and Sculpture have been more free to deal with the animal, because they can faithfully reproduce the outer form, and render its suggestiveness, without any commitment of themselves to the definite interpretation of that form. The

inanimate world,—who can swoon back into that kind of existence? When poetry touches it, its language is indefinite. In every stone that frets the brooks, in the clouds, the stars, the light of setting suns, there is an "active principle," a "something." The limit of vagueness seems to be reached. There is, besides, a relapse into the scientific modes of expression. In such matters, our speech is still a kind of algebra. How far it must remain such, it would be rashness to predict. It may be that this method of interpretation will find applications which we can at present scarcely hope for. We have tried to show that only in proportion as we approximate to this understanding of man and nature, do we approximate to knowledge of them.

## V.—DISCUSSIONS.

### THE TYPE-THEORY OF THE SIMPLE REACTION.

In a recent number of the *Psychological Review*[1] Professor Baldwin has proposed a "type-theory" of the simple reaction, which he opposes to the theory of "a certain mental *Anlage* or aptitude" as held by "Wundt, Külpe and others." I wish to examine this type-theory partly on its own merits, and partly in the light of the conclusion of my previous article on "Simple Reactions[2]."

A few preliminary remarks seem necessary to the full understanding of the issue. (1) The "theory" of the simple reaction, in the sense in which the word is used by the Leipsic investigators (Wundt, Lange, Martius, Külpe, etc.), consists in the analysis of the whole process into its constituent part-processes, physiological, psychophysical and psychological, and in the reference of the two latter kinds of part-process to their conditions, physiological or psychological. The theory has undergone very considerable modification between 1887 and 1895: so that the Leipsic names cannot be simply bracketed together, as they are by Professor Baldwin. A "disposition" or "aptitude" *theory* does not exist. (2) What the term "disposition" in this connection really means can best be shown by quotations[3]. Lange writes: "Our experience shows that there are certain persons who are incapable ..... of reacting consistently in the sensorial or muscular way throughout an experimental series, however good their intention and however complete their practice. They are too nervous, too distraught; and they fall into such a state of general mental excitement that they ordinarily do not even possess sufficient presence of mind to disclaim the reactions which they know to have been wrongly executed. It would, of course, be useless for the normal psychologist to make experiments upon subjects in so obviously pathological a condition.

[1] Vol. II. no. 3, May, 1895.

[2] *Mind*, Jan. 1895, pp. 74 ff.

[3] This particular word has, I believe, been used by myself only. Cf. *l. c.* p. 78: "The distinction drawn by L. Lange [between sensorial and muscular simple reactions] is a valid one, but not obtainable from every observer. Rather is there required for the work a special kind of disposition or *Anlage*."

—It is to be noted that individuals who are usually sure of their reactions may lapse into this condition for a day at a time[1].*" Wundt says: "You will find during the course of practice that there are individuals who are entirely incapable of any steady concentration of the attention, and who will therefore never make trustworthy subjects. That should not be surprising. It is not everyone who has the capacity for astronomical or physical observation; and it is not to be expected either that everyone is endowed with the gifts requisite for psychological experimentation.*" Bolton writes, in a different connection: "Certain attitudes, habits, and characteristics of mind ..... affect results in certain ways which are injurious to the experiment .... It is a fact which every psychologist must understand, that certain classes of persons are incapable of introspection*." The "disposition," then, is not a theory: it lies behind theory. Until a subject has been found with the psychological disposition, psychological results cannot be obtained at all, and there can consequently be no theory of psychological results. (3) It follows from this that Professor Baldwin's charge that the Leipsic school "rules out" results which do not accord with the Leipsic theory, *but are nevertheless constant and regular results*, is altogether unfounded. The only results ruled out are those which are wholly irregular and inconstant. Leumann especially emphasises the need of attention to "persönliche Bedingungen" in chronometrical investigations*. Külpe says: "These two forms of expectation [the sensorial and the muscular] may actually appear in very different psychological shape; not only do we find individual differences in reproductivity, but we may have a variation in the particular condition of preparation in one and the same reagent. If the person is incapable of any vivid ideation of a sense-impression, he will give the appropriate direction to his attention by the formation of a corresponding judgment, or by help of the organic sensations arising from the strain set up in the organ of sense or of movement, or perhaps by visual ideas of the stimulus or of the required movement. So far there has been no accurate discrimination of all these forms of muscular and sensorial preparation. But it is probable that certain differences in the determination of reaction times are largely referable to the differences in the form of expectation*." Here we see a full recognition of the existence of sub-forms of the muscular and sensorial types, and an attempt to furnish an explanation (theory) of their occurrence. (4) It follows further that Professor Baldwin's demand for a statement of the origin and meaning of the "disposition" is a demand for the impossible. We cannot account in detail for any of the "mental dispositions,"—talent, receptive or creative imagination, logical or mechanical memory, temperament, etc. Their explanation must be couched in general terms of nature

[1] All passages marked with an asterisk in this Discussion are exactly cited in my previous paper.

and nurture, of heredity and education. Our knowledge of the individual reagent, of his family history, etc., is insufficient for any exact theory of his mental disposition. (5) Lastly, in the light of these considerations Professor Baldwin's accusation of a *circulus in probando* falls to the ground. It is not that "certain cases prove the result, and these cases are selected because they prove that result." The argument runs somewhat as follows. 'Not everyone can react regularly. Persons who can react regularly react in the vast majority of cases in the sensorial-muscular way. Two conclusions are legitimate. There is a psychological disposition involved in regularity of reaction: and the obtaining of the sensorial-muscular types may be regarded as averagely characteristic of it.'—The theory of the reaction itself, as I said just now, is quite a different matter.

The type-theory sets out from the proposition that "the current distinction between sensory and motor reactions does not hold in the sense that the motor reaction is always shorter than the sensory." "Individual differences are clearly established." Then, reaching his conclusion by way of the pathology of the speech function (aphasia), Professor Baldwin argues that "a man is an 'auditive,' or a 'visual' or a 'motor' in his voluntary movements generally..... If this be true, it is evident that a man's reaction time will show the influence of his memory-type. The motor reaction we should expect to be most abbreviated in the man of the motor type; and less abbreviated, or not so at all, in the 'visual' or 'auditory' man." "In simple hand movements [as in speech] people must show the sensory and motor types." For the man of the motor type, "the thought of movement is the most facile beginning of the movement, just because it is *really the movement*, and nothing else, that he thinks of." "The man who gives relatively shorter sensory reactions is a 'sensory' in his type: with him the attempt to think of the movement *as a movement* interferes with the prompt and exact execution of it, just because he is not accustomed to execute his movements in that way."

It is clear that these sentences constitute the outline of a theory in the strict sense; *i.e.*, that "type" cannot be paralleled with "disposition." It is also clear that the theory is an attempt at the specific formulation of the conditions of those divergences to which Külpe refers only in general terms, and that the formulation has a good measure of aprioristic probability. Külpe, however, believes in the normality of the sensorial-muscular difference: Professor Baldwin does not[1]. Some of Professor Baldwin's evidence, it is true, was inaccessible to Külpe. We must ask whether the testimony of the new experiments is sufficient to turn the scale.

*Evidence for the Type-theory.*—The evidence in favour of any scientific theory is ordinarily of two kinds, constructive and circum-

[1] It is hardly necessary to remind the reader that the Leipsic "sensorial-muscular difference" and Professor Baldwin's "sensory and motor types" are quite different things.

stantial. The constructive evidence furnishes a direct experimental verification of the hypothesis; the circumstantial evidence consists in the demonstration of the ability of the hypothesis to account for facts left unexplained by previous hypotheses. Professor Baldwin draws upon both categories of proof. But it is a grave defect in his constructive argument that not one of the subjects to whose reaction times he appeals is recorded to have been specially tested for type-memory. The obvious plan would surely be to make certain of the type first, and then obtain reactions. There are many methods of testing type, apart from the reaction method.

Four persons reacted to sound. Two of them, B. and S., carried out the investigation of which the present Study is a report: presumably, therefore, they had the type-theory in mind throughout. Whether the other two reacted with or without knowledge we are not told. The reactions were of the following kinds: sensory (sensorial), kinæsthetic motor (attention "given to the movement by thought of the hand, the eyes being blindfolded"), visual motor (attention "fixed upon the hand, which is seen"), light sensory (sensorial, as before), dark sensory (sensorial in dark room), light motor (kinæsthetic motor, as before), and dark motor (kinæsthetic motor in dark room). Although nos. 1 and 4 and nos. 2 and 6 are identical, the times are given in different tables, and not compared. Tabulating, we have, in values of $\sigma$:

| Reagents: | B. | S. | F. | C. |
|---|---|---|---|---|
| Sensorial,— nos. 1 and 4. | 178, 176 | 235, 237 | 164 | 132 |
| Dark Sens. | 184 | 219 | | |
| Vis. Motor | 171 | 195 | 205 | |
| Kin. Motor,— nos. 2 and 6. | 149, 164 | 184, 158 | 202 | |
| Dark Motor | 138 | 179 | | |
| (Average Motor | | | | 157). |

The greatest reliance is placed upon the times of B. and S. But, in the first place, the fourth line of the tables shows that neither of these subjects reacts constantly. In one 1000 experiments, B. gives 149 $\sigma$ and S. 184; in another 1000, B. gives 164, and S. 158. If this variation is not due to imperfect practice, it calls for special explanation. Secondly: Professor Baldwin tells us that he used to react in the sensorial-muscular way*. The differences between his sensory and motor reactions amount here only to 29, 7, 12, and 46 $\sigma$, in the different cases. How has this change come about? Thirdly: Professor Baldwin, in drawing conclusions from the two Tables, argues from time-differences (22, 18, 21 $\sigma$) which fall within the limits of the mean variation of the total times (10 to 20 $\sigma$; no specific figures given). Nevertheless, it must be admitted that the Tables show some striking results, and that the construction of types from them is very ingenious.

Much emphasis is laid by Professor Baldwin upon a case reported

by Professor Flournoy[1], in which the difference between the time of reaction with sensorial attention and that with motor attention was not a positive 100 $\sigma$, but on the average a negative 110 $\sigma$. The reagent was incapable of the true "muscular reaction," *i.e.*, of reaction "with special preparation of the muscles." M. Flournoy writes of him as follows. "There is no sign of the preparatory [muscular] tension which is one of the characters of the true muscular reaction. And this is not due to any misunderstanding, but to a physical impossibility ..... Whenever he has attempted at my request to give his muscles a certain degree of preliminary tension, he has fallen into the other extreme, and produced a permanent contraction of the whole arm." This *contracture* appears to the reagent to be a "fatiguing and unnatural operation, which does not assist the reaction in any way." "When the attention is motor," in the manner normal to him, "it is the perception or visual image of his right arm which fills his thoughts." For him "motor attention is always attention to the visual form of the movement." "He is distracted by the visual image." M. Flournoy characterises him as a *visuel géométrique*, as distinguished from a *visuel pittoresque*. "He has no coloured hearing, but possesses schemata, perfectly definite and localised, for the series of numbers, the week, the year, etc."

It is unnecessary to go into further detail either as regards the mentality of the reagent, or M. Flournoy's analysis of his time results. The facts present no difficulty to the Leipsic theorists,—who can accept them, just as they accept the facts of differences

[1] Professor Baldwin writes (p. 265): "Titchener, in his summing up, does not cite the cases of Flournoy nor the earlier report of one of my present cases (F.) in the [*N. Y.*] *Medical Record*, April 15, 1893, although they tell directly against his own views. ..... [He] is...wrong in citing me as favouring the position [of Lange and Wundt]."

I have quoted a remark from Professor Baldwin's report on p. 79. I did not mention it on p. 77 because the reading of it gave me no idea that the author had turned his back upon the sensorial-muscular difference, as a fundamental fact. In the light of later statements (that in the *Psych. Rev.*, and that in *Mental Development*, I. p. 465) it is easy to see that I mistook his meaning,—for which I am very sorry. The report itself is a preliminary note, without figures.

On p. 79 I have also mentioned M. Flournoy. When I wrote, I had not succeeded in obtaining his articles: I knew them only from Ebbinghaus' summary in the *Zeitschr. f. Psych.* (v. pp. 406, 407) and from Philippe's abstract in the *Rev. phil.* (XXXV. p. 444). They were not cited on p. 77 for the reason that they seemed to me to be irrelevant to the issue. The mechanism of the visual reagent's mind appeared to be as exceptional as that of Stricker's, *e.g.* Hence I regarded the case as one to be treated apart from the question of the normal or average variations of reaction-time.

The quotations in the text are from M. Flournoy's second paper (*Arch. des sci. phys. et nat.*, XXVIII. pp. 319 ff.). I think that they justify my original opinion. Of the former article (XXVII. p. 575) the author writes to me: "It was only a preliminary note, very brief, and not giving any figures."

of memory-type, and can also accept the explanation offered of them. All that they would say is that the "physical impossibility" to react muscularly is not, in laboratory experience, a feature of the normal or average mental constitution, any more than number-forms are. Consequently, the mind so constituted cannot be drawn upon to furnish norms of reaction: however interesting its workings may be in other connections.

Circumstantial evidence is found by Professor Baldwin in certain results published by Cattell, and (doubtfully) in times obtained from Donders. With regard to the former Professor Cattell writes to me as follows:—

"I have always found it difficult to define my own 'memory-type' by introspection. I presume that I am what would be called 'verbal motor.' The length of my reaction-time does not seem to be affected by the direction of attention. The observer J. also gave the same reaction-time, whether attention were directed to the stimulus or the movement. I am not able to define the 'memory-type' of this observer: but it is not strongly visual. The third observer, D., is a professor of biology, and is by nature and training visual; his reaction-time was much lengthened when he attended to the movement, he having normally always attended to the sensation. I presume that his case would support the theory of Flournoy and Baldwin. My own idea is that an unusual direction of the attention lengthens the reaction-time, but that when the reaction has been much practised it becomes reflex. In my own case it requires practically no attention of any sort.

I can, however, give you an instance (unpublished) that supports your point of view. An observer reacted much more slowly for sound than for light. When I enquired into the matter I found that it was because his attention was disturbed (*i.e.* was sensory) by not knowing where the sound was. When I shewed him the place and nature of the sound, his reaction became much quicker and more regular."

Honours are divided. But it is plain enough that we cannot infer type from reaction, whatever may be the effect of type upon reaction, given equality of all other conditions.

The Donders times are 180 $\sigma$ for sound, and 188 $\sigma$ for light. Wundt explains the first as sensorial and the second as muscular, referring the difference to practice[1]. Donders had reacted to light far more frequently than to sound. Of course, he may have been a 'visual,' as Professor Baldwin guesses. But I have so far been unable to find any indication of the fact in the literature: and Wundt's hypothesis is well borne out by the last case cited in Professor Cattell's letter.

Professor Baldwin does not claim support for his theory from the other times which do not show the sensorial-muscular difference, quoted in my previous paper.

*Evidence against the Type-theory.*—"There are as many kinds of memory," writes Volkmann[2], "as there are kinds of ideas." True, "it is probable that inequality of memories in the same

[1] *Physiol. Psych.*, 4th ed. II. pp. 312, 313.
[2] *Lehrbuch d. Psych.*, 3rd ed. I. p. 476.

individual is the rule, not the exception[1]." But there seems to be no good ground for the assumption that this inequality is, on the average, so great as to pass over into a virtually exclusive preponderance of one particular memory. Most people, I imagine, would judge by Jacob's voice *and* by the hands of Esau, though they might incline, by nature or education, to prefer either one of the two criteria. In other words, a "mixed" memory-type must be recognised.

The elucidation of a memory-type is by no means an easy matter. No memory-image is qualitatively constant, even if it persist in its original type. Very frequently it does not: many would-be visual memories are in reality verbal (auditory) memories, —we remember that we "saw" things of which we have merely heard our elders speak; or we say that we remember "seeing" when all that we really remember is the form of words in which we are accustomed to narrate the experience. Type may shift in other ways: it is possible to break oneself of the habit of piano playing by finger-memory, and to learn to "read," *i.e.* to vary from the motor type to the sensory. In my own experience, memory-type differs considerably, and not always quite accountably, as between special recollections and actions[2].

I have tested and observed the processes of memory in myself since 1890. By nature, my visual memory is the strongest; the motor is available, but a good deal weaker; the auditory lags still farther behind the motor than the motor does behind the visual. Having satisfied myself of these relations, I attempted, in 1891 and 1892, to give special practice to the motor and auditory types; and succeeded in largely increasing their effectiveness. Since 1892 I have been engaged in experiments which have demanded an exclusively visual memorising: and the results show that the effort to rule out conflicting processes has been successful. Yet my visual and auditory reactions, sensorial and muscular, have varied only by a few $\sigma$ during the five years. Moreover, the time-difference showed itself from the moment that I had learned the two possibilities of direction of attention, and before I knew anything of what 'ought' to happen upon Lange's theory.

Professor Baldwin thinks that distinctions will manifest themselves, within the sensory type, in the times of reaction to stimuli from various sense-departments. A 'visual,' *e.g.*, will react more quickly to light than to sound. Indeed, this belief is essential to the type-theory of reactions. As I have said above, the theory is

[1] Ribot: *Les maladies de la mémoire*, 7th ed. pp. 110, 111.

[2] Cf. Baldwin, *Mental Development*, pp. 435, 461, note. Ch. XIV. XV. of this work call attention to certain of the facts noticed above; but their generalisations appear to be one-sided. Such, at least, is the indication of the details of evidence which I have been able to collect.—The only explicit recognition of a "mixed" type by Professor Baldwin that I can find occurs in the *Phil. Rev.*, II. p. 396 (article on "Internal Speech and Song)." Elsewhere, type is treated as if necessarily simple.

a "generalisation" from the facts of aphasia. "Voluntary movements generally" will be performed as the speech-movements are performed: the "cue" for reaction will be the "cue" normal to speech, in the given case. M. Binet, who appears to have arrived independently of Professor Baldwin at a similar conclusion, regards the results of his test of M. Inaudi as invalidating the hypothesis[1]. M. Inaudi is a professional "calculator," of the pure auditory type. The auditory 'cue,' *i.e.*, is very strongly predominant in his calculations. There is also a motor 'cue,' but "the movement of articulation only intervenes to reinforce the auditory image." Visual ideation is exceedingly elementary. The reaction-times were: sound, 86 $\sigma$; sight, 89 $\sigma$; touch, 88 $\sigma$. M. Binet writes:

"The average time of reaction remains almost exactly the same, 0·08 sec., whatever the nature of the stimulus. One would have supposed that M. Inaudi, whose type is for all practical purposes exclusively auditory, would react most quickly to auditory stimuli. We even imagined at the time that the reaction method could be employed for the determination of the memory-type of different persons. The hypothesis, perhaps, is still not wholly untenable: it may be that experiments upon hysterical subjects would furnish interesting results. But at any rate, it has broken down completely in the case of M. Inaudi."

Professor Baldwin may fairly object that the test is not unexceptionable, as no comparison was instituted between the sensorial and muscular directions of attention. In any event, however, the results appear to tell heavily against the type-theory. If the times are "sensory" they should have shown differences. From the Leipsic standpoint they would be judged to be muscular: (1) because M. Inaudi was new to the reaction experiment, and so would be apt to concentrate his attention upon the hand movement; (2) because of their shortness; (3) because of their small mean variation (10 $\sigma$); and (4) because of their uniformity in the different sense-departments. If we grant that they are muscular, we have a man, endowed with an extraordinarily developed sense memory, preferring muscular times, and giving no sign of any inclination to change to the opposite form,—as the theory requires; while the muscular times are so short that it would be impossible for the sensorial to be shorter,—as the theory again requires.

M. Binet bows to the facts. "It must not be supposed that M. Inaudi is an auditive outside of his professional exercises in calculation. He is an auditive for calculation, *i.e.* for one partial, special, sharply defined memory: there is nothing to show that he is guided by audition in the use of his other faculties." One cannot argue, with Professor Baldwin, from the "cues, checks, controls," involved in speech to those "affixed to hand actions." A man may speak from predominantly sensory 'cues,' and yet execute a true muscular reaction from a motor: indeed, he may prefer to take the motor cue for reaction, when he is left free to choose between that and the sensory.

[1] *Psychol. des grands calculateurs*, etc. 1894, pp. 106 ff. 69, 72.

To these two negative instances must be added the weight of all the evidence for the generality of the sensorial-muscular difference.

As the argument has been somewhat overweighted with details, it may not be amiss to append a brief summary:

(1) Only a certain proportion of those who offer themselves for test in the psychophysical laboratory prove to be capable of constant and regular reaction. Hence I have spoken of a "disposition" for these psychological experiments.

(2) The great majority of those who react with constancy show the sensorial-muscular difference. Hence I have taken this difference as averagely indicative of the psychological "disposition."

(3) Those who react regularly, but not in the sensorial-muscular way, require special attention at the hands of the experimenter. Their times may be explained by degree of practice (so Wundt of Donders), by automatism[1] from continued practice (Wundt of Cattell, Cattell of himself), by abnormality (uncommon feature) of mental constitution (Flournoy's case), by the character of their reaction education (Dessoir's cases), by novelty of stimulus (Martius), by insufficient education (van Biervliet's cases), etc.

(4) Upon the basis of the foregoing propositions a theory of the simple reaction has been built up. Its stages have been briefly sketched in previous papers in *Mind*. It is connected with the names of Wundt, L. Lange, Martius, Münsterberg, Külpe, etc.

(5) Professor Baldwin offers as a substitute for this theory a theory couched in terms of memory-type. Reaction time is an index of the type of 'cue' used by the subject in speaking. The sensorial-muscular difference is not a fact from which inferences can be drawn for theory. There is no reason why the sensorial time should be averagely longer than the muscular. Sensory speakers react more quickly sensorially than muscularly, and *vice versa*.

(6) The new theory certainly possesses something of the "naturalness and probability" which is claimed for it by its author. But the evidence for it at present is so slight that it is hardly more than a conjecture. It seems fair to say that no unequivocal testimony has been adduced, while the counter-evidence is very strong.

If the *a priori* probability be still emphasised, the objection must be urged that the theory, in its present form, is much too simple. The memory mechanism is more complex than Professor Baldwin recognises.

[1] It is to be noted that automatism can only arise where a considerable amount of practice has preceded the attempt to get the sensorial-muscular difference. I have never known the difference, once obtained, to decrease. It rather tends to increase: as the sensorial time is constant, but there is great difficulty in the retention of the muscular form intact. Hence I must differ entirely from Professor Baldwin, *Psych. Rev.*, II. p. 270.

E. B. TITCHENER.

## VI.—CRITICAL NOTICES.

*A Critical Account of the Philosophy of Lotze* (*The Doctrine of Thought*). By HENRY JONES, M.A., Professor of Moral Philosophy in the University of Glasgow. Glasgow: James Maclehose & Sons, 1895. Pp. xvi, 375.

PROFESSOR JONES has gone very thoroughly to work upon Lotze, for this book—which runs to 375 pages—deals only with "the doctrine of thought," as set forth, for the most part, in his *Logic*, and a second volume is promised which shall deal with Lotze's metaphysical doctrines. Even those who are most grateful to Lotze for his services to philosophy may be disposed to think that this is to rate his importance too highly; for, with all his acumen, Lotze is not a philosopher of the first rank. The unsystematic character of his mind forbids us to place him among the *dii majores* to whom commentaries are rightly dedicated. It is not, however, the sympathetic deference of a disciple which has induced Professor Jones to devote so much attention to Lotze's methods and conclusions. Lotze is used throughout as an object-lesson. The conclusion which the book seeks to establish is that "the main contribution of Lotze to philosophic thought, the only ultimate contribution, consists in deepening that Idealism which he sought to overthrow. He yields *a tergo*, and as an unwilling witness, an idealistic conception of the world" (Preface). The purpose of the book is thus not only to disarm Lotze's criticism of Hegelian idealism by convicting him of inconsistencies, but also to re-inculcate Hegel's fundamental tenet. It may be doubted whether this is the best way of approaching either Lotze or "Idealism"; for it necessarily thrusts into the background the elements of truth underlying Lotze's criticism which gave it its vitality, and which Professor Jones seems now and again to acknowledge. On the other hand, the indirect method of approaching the idealistic position involves so much controversial detail that we do not get beyond a very general statement of the position itself. But as a living contribution to the philosophical problem as that is shaping itself at present in English-speaking countries, the volume possesses a distinct importance of its own, and it is doubtless in this light rather than as a historical monograph upon Lotze that the author would like his book to be regarded. Needless to say that

Professor Jones brings critical insight to the destructive part of his work, and force and fervour to the constructive part, which supplies the nerve of the whole. The whole book is vigorous and remarkably fresh, and the emphasis laid in the last chapter upon the "frankly realistic" nature of his own theory gives Professor Jones's presentation of Absolute Idealism a degree of originality which differentiates it from the ordinary versions of English Hegelianism that descend from Green.

The first chapter, which deals with 'The Main Problem of Lotze's Philosophy,' takes a general view of Lotze's historical position in relation to the main currents of thought during the century, and gives some account of his chief philosophical contentions, the motives which underlay them and the schools or tendencies against which they were directed. It is so well done that the ordinary reader will regret that more of the like is not vouchsafed him; the remaining chapters plunge at once into 'the doctrine of thought' and are sufficiently stiff reading. As Professor Jones points out in this chapter, it is as a critic of the two dominant tendencies of the century that Lotze possesses historical importance. He criticises, on the one hand, the Naturalism or Materialism which was so confidently propounded in the middle of the century as the philosophical outcome of science, and, on the other hand, the claims of 'pure thought'—what he considers to be the exclusive intellectualism of dialectical idealism and its inadequate provision for the spiritual needs of the individual. To say, however, that Lotze "sets himself *against* the two great constructive movements of modern thought *on behalf of the contents of the ordinary* consciousness' (p. 7)[1], is rather an unfair way of stating the case; and, indeed, Professor Jones admits (p. 14) that this "may seem to be a hard saying," and even that "taken absolutely it is not true." He supplies himself a more generous estimate when he says (p. 15) that "Lotze has avoided the one-sided development of abstract views, placed himself at the point of collision of the primary interests of human life," or again (p. 24) "it is no small honour to Lotze that, in an age which was given over to abstract constructions of man and the world, he stood almost alone protesting against the rash haste which secured unity by sacrificing its content." In the light of these admissions, the original statement would be more correct if, for the words which Professor Jones italicises, we substitute others and read the sentence thus: Lotze set himself against the two great constructive movements of modern thought *on behalf of elements of experience which they alike neglect.* It is his massive protest against the sacrifice of "man's inalienable and highest aspirations" (as he terms them in the *Microcosmus*), combined with his skilful exposure of the weak places of the pretentious systems that would override our deepest needs, to which he owes his honourable place in the history of this century's thought. By his undaunted re-assertion of the fundamental truth of the view

[1] The italics are in the original.

of the world implied in moral or spiritual experience, he re-inspired confidence in many who felt the consequences of Materialism and a deified Logic to be almost equally disastrous, but who had been intimidated by the assurance with which the system-makers promulgated their conclusions. And if, as the century draws to a close, there is a very general and growing recognition of the limitations of the scientific point of view, and if Absolute Idealism, on the other hand, in the person of Professor Jones and others, endeavours to dissociate itself from the abstractions of "Panlogismus," and acknowledges more freely the defects of many statements that have passed current—this result is due in no small degree to Lotze's patient work between 1840 and 1880, a period of forty years during which he must often have seemed to himself and to others like the voice of one crying in the wilderness. In point of fact he has exercised a more pervasive influence than usually falls to the lot of anyone who is not a thinker of first-rate originality and genius. No doubt Lotze has been enlisted as an ally, or rather adopted as a champion, by many representatives of what Professor Jones calls "the popular and theological consciousness," and it is not to be denied that the curiously unsystematic character of Lotze's mind and his habit of balancing conflicting possibilities without indicating any definite conclusion, give him at times the air of falling back upon popular thought. But it has to be remembered that what Lotze means to defend is not the specific formulæ of any accepted creed or system but only the ethical or spiritual convictions that underlie its dogmas, and of which perchance these dogmas may be a very imperfect expression. To put it even more generally, it is simply the spiritual view of the world for whose safety he is concerned. Similarly Lotze's revolt against Panlogism and his insistence on the part played by the feelings, both in the structure of reality and in our reconstructive estimate of it, has no doubt favoured the development of a type of theological thought which seeks to fence off the territory of religion from reason altogether, and which endeavours accordingly ingeniously to evade an answer to the question of the metaphysical truth or untruth of the doctrines it teaches. But this divorce of the ethical or religious from the rational can hardly be considered part of Lotze's own programme. He has left on record in many passages his appreciation of the effort of speculative idealism, and if that idealism was really, as he says, in pursuit of "the supreme and not wholly unattainable goal of science," then there is no part of experience from which reason can be, as it were, warned off. But of course the historical consequences of a doctrine may always be fairly produced in evidence against it, and, so far, Professor Jones is quite within his rights in pointing out the dangers involved in Lotze's positions or at least in his way of stating them.

But it is time to pass from these generalities to the precise thesis of Professor Jones's book. The points in Lotze's doctrine of thought on which Professor Jones lays most stress—and which he sets himself to controvert—are (1) the subjectivity of thought, and (2) its merely

formal or instrumental function in our experience. Under the first head he refers to the numerous passages in which Lotze insists that while our thoughts are valid or true of things—correspond to things—they yet are not the things themselves. "The things themselves do not pass into knowledge; they only awaken in us ideas which are not things." "We may exalt the intelligence of more perfect beings above our own as high as we please; but so long as we desire to attach any rational meaning to it, it will never *be* the thing itself, but only an aggregate of ideas *about* the thing." To condemn or disparage knowledge on account of this necessary subjectivity is, however, according to Lotze, quite unjustifiable, unless we assume that the function of knowledge is not to know things but to be them. In a sense Professor Jones admits the obvious truth of these considerations, but at the same time he intimates that Lotze's way of stating the case makes "the rift between thought and its objects final." But the two points mentioned above are too closely connected to be kept definitely separate in exposition, and the central part of the book, after the two introductory chapters, is devoted rather to the second point, that is to say, to a critical analysis of Lotze's limitation of thought to a formal or instrumental function in our experience. Thought, according to Lotze, is, as Professor Jones puts it, "only a single part or element or faculty of mind, occupying a restricted place amongst several others, which cooperate with it in the production of the contents of our intelligent life" (p. 50). More particularly thought is dependent upon sense and an 'unconscious psychical mechanism' for its content. Again, the feelings and emotions are absolutely irreducible to thoughts or conceptions: so much so that, as Lotze says, "it is possible that even divine intelligence would find nothing in the conception of knowledge alone that should necessitate feeling to issue out of it." It is to feeling that we owe the consciousness of the worth which objects have for us. Feeling as the source of our judgment of value thus takes precedence of cognition, for the Good is a higher category than the True. Indeed it may be said that to feeling we owe the ideal of knowledge itself—the conception of an all-comprehensive and harmonious whole—and feeling also awakens the impulse to seek it. Finally, thought yields only hypothetical necessity; absolute or unconditional necessity is given only in the immediate certainty of æsthetic and moral conviction. "It is not pure intelligence, whether we call it understanding or reason, that dictates to us those assumptions which we regard as inviolable; it is everywhere the whole mind, at once thinking, feeling, and passing moral judgments, which, out of the full completeness of its nature, produces in us those unspoken first principles to which our perception seeks to subordinate the content of experience." "The fact that there is truth at all cannot in itself be understood, and is only comprehensible in a world the whole nature of which depends upon the principle of the Good" (*Microcosmus*, Bk. IX. c. 5). Professor Jones summarises the position thus: "The conception that thought depends upon a foreign source for its data

lies at the root of the whole attempt of Lotze to limit its powers. It leads him, in fact, to share the material of thought between feeling on the one side and sensation on the other. Feeling supplies it with the ideals which inspire and guide knowledge, and which express, although indefinitely, the harmonious totality of experience; and sensation supplies it with the material out of which is elaborated our world of sensuous objects" (p. 63). And he points out a parallelism, in some respects, between Lotze's Feeling and Kant's Reason, feeling being for Lotze the source of our moral and religious ideals. But he considers the dualism of Lotze's doctrine more dangerous, inasmuch as it leads (or has led historically) to the subjugation of intelligence to feeling, to despair of philosophy and an appeal to faith and "the intuitions of the heart."

After this analysis of Lotze's doctrine, the third chapter proceeds to redargue the position so far as concerns the account given of the relation between perception and conception. Attention is called at the outset to some of Lotze's metaphors. Thought is "a tool"; or, again, thinking is the path we take to the hill-top; it is the circuit we are compelled to make in consequence of the position of the human mind, not at the centre of things but "somewhere in the extreme ramifications of reality." By thinking we succeed in reconstructing the real world; we do get our view from the hill-top. But "the act of thinking can claim only subjective significance...All the processes which we go through in the forming of conceptions, in classification, in our logical constructions, are subjective processes of our thought, and not processes which take place in things." According to Lotze, however, these subjective processes do in the end enable us to reach an objective result, and Professor Jones describes his attitude as an attempt to "strike a middle path between the Scepticism which severs knowledge and reality and the Idealism which seemed to him to identify them." The remainder of the chapter is intended to prove the impossibility of such a *via media.*

The specific function of thought, according to Lotze, is "to reduce the coincidence of our ideas to coherence." It does this "by adding to the reproduction or severance of a connection in ideas the accessory notion of a ground for their coherence or non-coherence." It thus converts an associative into a reflective or rational experience. This leads Professor Jones to ask what is the nature of the relation which exists between the associative and the thinking form of consciousness. "Does thought *produce* the principles which give coherence to the contents of our experience, or does it only *discover* them in that experience? Is the original datum of thought a genuine manifold with no inherent connections, or is there in truth no such thing as a manifold, but only what *appears* to be a manifold, because the principles of unity within it are latent or merely implicit?" (p. 84). He finds Lotze's answer "ambiguous, if not inconsistent," and it may be said at once that he lays his hand here upon serious weaknesses in Lotze's statement. The last sixteen pages of this chapter form a very cogent piece of reasoning as well as

an admirable piece of philosophical writing. Professor Jones succeeds, I think, in showing that Lotze wavers between a representation of the datum "now as a mere meaningless state of consciousness and now as a world of objects related in space and time." "According to one view so much is supplied to thought that nothing is left to it except to 'sift' the rich content of perceptive experience and re-arrange it, without in any way adding anything to it except the reasons for its combinations. Thought, on this view, is formal and receptive, and its only work is that of reflection. It presents the old world over again, but in the new light of an ordering principle. According to the other view, it is only through the intervention of thought that there are either ideas or an intelligible world at all. It arrests the shifting panorama of subjective states of consciousness, objectifies and fixes them so as to give them meaning, and then relates them into a systematic world of knowledge. On this view everything, except the absolutely meaningless subjective data, is due to the spontaneous activity of thought. In other words, thought, instead of being receptive and formal, is essentially constructive, the cause on account of which alone there can be either ideas or objects, or connections between them" (pp. 96—7). Now it is plain enough that Lotze is here working at a real problem, but every careful student of his *Logic* must admit that in trying to articulate a theory of what actually happens he involves himself in serious confusion. Professor Jones is, in my opinion, substantially right when he finds that the root of this confusion is "the assumption that the first datum of knowledge is the subjective state, or the change in consciousness consequent upon the varying stimuli arising from the outer world, and that the first act of thought is to objectify this subjective. His whole doctrine rests upon the psychological hypothesis that what we first *know*, indefinitely enough perhaps, is a subjective state, and that the first act of thought is to make this state in ourselves representative of an outward object. The subjective is projected, reified, posited, so as to become an object" (p. 105). As against this, Professor Jones successfully maintains that, just as we do not infer the existence of a seen object from physiological changes in our brain or nerves, but on the contrary infer these processes because we have first seen the object, so although it is true that consciousness as a matter of fact must change in order that we may know the object which incited the change, that "does not prove that we first *know* the change in ourselves and then infer the object. On the contrary the first in the order of events is again the last in the order of thought...In the order of knowledge the objective comes first...The reality first given to us indefinitely, opens out upon us into differences, and sunders into the primary distinctions of subjective and objective. But we are not entitled, on account of the fundamental character of this distinction, to forget or deny the unity of the reality in which the distinction takes place; nor is there any justification for fixing a complete gap between the subjective and the objective, and compelling thought in some unknowable

way either to *objectify* the former or a part of it, and to leap blindly from one world into the other, from the sphere of mere subjective states to that of external facts corresponding to them...If we begin with the purely subjective, we must end there...Lotze himself nowhere explains this extraordinary process of seizing upon a mere change in consciousness, flinging it, or a part of it, into a sphere in which it can confront the self as a not-self, and endowing it with a quasi-independent existence. Nor is it explicable...for in order to begin at all, we must already have an object" (pp. 105—113). I think it can hardly be denied that Lotze's account of the objectification of the subjective as the first operation of thought, converting impressions into ideas, lays him open to this criticism, and is, in point of fact, fundamentally misleading. It is an attempt, in an account of knowledge, to get behind the fact of knowledge altogether, to explain how that which is not in any sense knowledge—"nothing but a state of consciousness, a mood of ourselves," a "mere internal movement," a "meaningless change in the state of the soul"—is transformed into knowledge and comes to have significance or cognitive value for the subject in which it takes place. Now if thought is to objectify or in any way to deal with these subjective states, it must have some knowledge or awareness of them as such; and that implies the fact of knowledge as already existing. It is indeed obviously impossible for us to place ourselves outside of this fact and explain how knowledge of any sort is possible. Nothing is more certain than that "the miracle of knowledge" has, from a logical and ultimate point of view, simply to be accepted. As Professor James puts it (*Psychology* II. 8): "In his dumb awakening to the consciousness of *something there*, a mere *this* as yet (or something for which even the term *this* would perhaps be too discriminative and the intellectual acknowledgment of which would be better expressed by the bare interjection 'lo!') the infant encounters an object in which (though it be given in a pure sensation) all the categories of the understanding are contained...Here the young knower meets and greets his world; and the miracle of knowledge bursts forth, as Voltaire says, as much in the infant's lowest sensation as in the highest achievement of a Newton's brain." From a physiological or psychological standpoint, we may, of course, say that the miracle bursts forth on the occasion of certain antecedent processes; but to ask *how* these processes give rise to the unique relation of knowledge is to involve ourselves in a hopeless hysteron proteron. To enquire how there is such a fact as knowledge at all, may indeed be said to be the ultimate form of the type of enquiry which Lotze so often ridicules—the desire to know how being is made. To say that 'thought' creates knowledge out of mental states unreferred, is a highly misleading way of saying that knowledge in the finite consciousness depends upon organic stimulus. Such 'mental states' are the hypothetical result of the organic stimulus, interposed between that stimulus and the mental reaction in the shape of attention; but even psychology can say nothing of these hypothetical

states beyond consigning them to the convenient receptacle of the sub-conscious. The desire to *explain* the actual passage from the organic to the conscious, to catch nature in the act, as it were—half in and half out as Dr Stirling somewhere puts it—is probably at the root of theories of objectification like Lotze's, but the interposition of unreferred states does not really help to elucidate the transition or to ease in any way the acceptance of the miracle of knowledge.

The consequence of this false start on Lotze's part is that at one time he talks as if the whole intelligible world were the work of thought, superinduced upon a meaningless datum; at another time he speaks of thought as a purely formal function, which receives from perception a world of objects in space and time, and which is limited to the reflective discovery of the grounds of the coherence of what is already associatively combined for it. These are the two views which Professor Jones signalised in the passage quoted above, and it is plain that they are the same two views which we find imperfectly reconciled in Kant's account of the synthesis of imagination. Lotze's 'unconscious psychical mechanism' which prepares the data of sense for the advent of reflective thought is just the 'blind but indispensable function of the soul' which plays so important a part in the Kantian exposition. And it seems to me that Professor Jones's method with Lotze here may be instructively illustrated by the divergent views which commentators have taken of this part of the Kantian theory. According to one interpretation of Kant, objectivity, order and connection are first introduced by the categories into the formless manifold of sense; the apperceptive unity consciously acting through these functions seems thus actually to *make* the world we know. This is the impression we carry away from much of Green's writing, and to this view, if I am not mistaken, Professor Caird's first commentary lent some countenance. Dr Stirling's *Text-book to Kant*, on the other hand, largely in a spirit of polemic against the subjectivity of this view, laid undivided stress upon the preparatory work of imagination, to the extent of apparently making the whole work of thought otiose, a 'stamping' of connections already given. From this point of view, he ended by characterizing Kant's whole scheme of the categories as a laborious 'superfetation.' Professor Caird, in the second edition of his commentary, gives a more discriminating account of Kant's real meaning by emphasizing the words which Kant himself italicises, namely that the synthesis of the imagination, although 'blind' inasmuch as it does not bring the categories consciously into play, yet take place *according to the categories*. The work of the reflective understanding is simply to bring to explicit consciousness the principles on which the associative or pre-rational consciousness has been unconsciously proceeding. Neither in Kant nor in Lotze, however, is this distinction between the associative and the rational consciousness drawn with sufficient clearness and breadth. I know no place where it is so satisfactorily worked out as by Professor Laurie in his *Metaphysica Nova et Vetusta*. Professor

Laurie employs the apt term Attuition, or the attuent mind, to designate the receptive consciousness of objects, and of the relations between objects, possessed by the higher animals or by a child before the emergence of active Reason in the strict sense of that term. Reason converts attuits or passive recepts into actively grasped percepts, and in its search for grounds transforms (some instances of) sequence into causal connections. In general, it makes possible the beginnings of science, the beginnings of our human knowledge of a stable system of things. It will not be denied that this pre-rational consciousness exists; and (although the life of reason in every case rises from it as a basis) the distinction between the two can hardly, it seems to me, be too sharply drawn. The two lives are on different planes, and there is no passage from the one to the other save by a leap. The presence of the reason-impulse means all the possibilities of science, it means morality, art and religion and all the possibilities of human history; its absence means the absence of all these. But the attuent consciousness, although without the formative impulse of reason it does not possess the notion of objectivity and truth which gives rise to science, is very far from being limited to a succession of purely subjective states or atomic sensations. It receives images of objects which it distinguishes from one another and some of which it comes to associate together. This Lotze sees clearly enough and hence he attributes so much to sense and the unconscious mechanism and apparently leaves so little for thought to do. Professor Jones is perhaps hardly just—or let us say, hardly generous—to Lotze's intention here; his criticism somewhat resembles Dr Stirling's method with Kant. He beats Lotze up and down the field, thrusts him back upon his 'meaningless changes in the state of the soul,' quotes his acknowledgment that thought is necessary to objectify these, and then claims that he has surrendered his whole position and admitted the presence of thought in perception from the very first and throughout the whole process. Or, if this is not granted, he insists that Lotze reduces thought to an otiose appendage of sense. The success which attends this method of criticism is due, as we have seen, to Lotze's blundering attempt to get behind knowledge altogether and describe how 'impressions' are converted into ideas.' But if we disregard this and look at the facts as they are, we are bound to admit that the sensuous and associative stage does exist, and so does the rational. Lotze expresses the difference between the two by saying that, in the latter, thought has supervened, affirming and organising. This may not be an unexceptionable, but surely it is a fairly legitimate, way of stating the difference, seeing that Lotze always means by thought the reflective, consciously ratiocinative function, the logical understanding. It is the case that thought, so understood, adds nothing but its own form to the sense-matter presented to it, and that many of the connections which it establishes among sense-objects are merely re-affirmed or actively taken possession of. But, even so, the imposition of this form is surely all-important; it is

the first condition of an intelligible world. And there are, besides, notions of reason which cannot be said to be *given* in sense at all, such as those of cause and end. Lotze signalises the first as constituting in an especial sense the form of reason when he says that thought has to convert coincidence into coherence; sense only knows *b* after *a*, reason knows *b* through *a* or because of *a*.

Professor Jones makes it a general objection to Lotze that "the same series of processes seem to be repeated upon two different levels, once by feeling or experience and once by thought" (p. 93). But this is exactly what happens. Moreover the reproach seems out of place in the mouth of one who professes a general allegiance to Hegel; for, according to Hegel, all advance is simply repetition of the same form at different stages. Professor Jones would probably reply that it is just because Lotze does *not* take the associative and the rational consciousness as different *stages* of the same life or the same world, that he finds his statement of the case objectionable. Indeed this is what he does say: "The world of sense and the world of thought correspond point by point [*i.e.* in Lotze's account]; but Lotze does not try to furnish any reason for this correspondence and mutual adaptability. If he had supplied such a reason, the worlds of thought and sense would have become species in a universal, to use his language, or different stages in the evolution of a single principle of reason, to use the language of idealism." "We might expect the simple conclusion that because the higher is possible only if it is also in the lower, therefore it *is* in the lower, and the lower is only an elementary form of the higher" (pp. 99—100). Now I am not concerned to defend Lotze's way of stating the case. I have already admitted and emphasized his grave initial error. I will go further and add that he frequently does seem to leave sense and thought side by side or over against one another as unrelated opposites. He treats the laws of thought —the conditions of the thinkable—as if they were written upon the sky of some abstract heaven, and had no inherent relation to reality. He repeatedly stops to give fresh expression to his astonishment that the world is responsive to thought at all and not *ab initio* and essentially unthinkable. Such preposterous astonishment certainly seems to imply that the mutual adaptability is the result of a happy accident; and so far Lotze falls behind Kant, who also emphasized the mutual adaptation of sense and thought, but adduced it as evidence that the world has its origin in intelligence as regards its matter no less than as regards the formal categories. To speak as Lotze does is certainly, so far as language goes, to divorce reality from intelligence and to leave it standing as an "unknown external something," as "unknown things and processes," as "things themselves inacessible to observation which we suppose to underlie our sensuous perception," as "an invisible something which we suppose to be outside us." These expressions, all culled from Lotze's *Logic*, prove sufficiently that he commits what I agree with Professor Jones in considering the unpardonable philosophic

sin—the assertion of the thing-in-itself as an unknown and unknowable kernel of reality. In the light of this sinister consequence, one can understand Professor Jones's jealousy of Lotze's procedure in delegating to sense and the psychical mechanism one after another of the functions of "thought." He seems to Professor Jones to hand over these functions to an essentially non-rational process and to leave thought with its occupation gone, an uncalled-for excrescence on the self-acting system of sense. This danger does lurk, we may admit, in Lotze's general habit of thought, but it does not necessarily attach to the distinction between the work of sense and association and the subsequent work of reflective thought. One may emphasize the work done by the attuent consciousness, and even speak of 'thought' as a formal function which supervenes upon a ready-made world, without in the least intending to deny that the world of attuition is a preformation of reason in sense. Professor Laurie, for example, after making this distinction the pivot of his whole exposition finds no difficulty in concluding "that the outer is not merely an $x$ negating my self-consciousness, but that, on the contrary, it is Reason externalized, and that, as universal reason, it is one with the moments of my finite reason.... It would be a strange thing indeed if the energy of Reason seizing the external found that the one did not answer the other—that the datum of sense defeated the process of dialectic, that the plastic power of Reason encountered material which it failed to mould. It would be equally strange if the datum of sense failed to find its knower and interpreter, if it for ever remained what it appears to a dog or a horse" (*Meta. Nova et Vetusta*, pp. 213 and 227).

But while we may intelligibly speak thus of the external world as the externalisation of reason (seeing that the formal categories of reason are reflected in its structure), it must still be maintained that the way in which Hegelian idealists speak of 'thought' is calculated only to darken counsel. Thought, whether we wish it or not, is identified beyond recall with the intellect as such, the understanding, the reflective, discursive faculty. To talk, therefore, as is here done, of thought as "constitutive" of reality, as "essentially constructive"—to say that "thought is a constitutive and concrete reality" (p. 287) and that everything is "due to the spontaneous activity of thought" (p. 97)—is really to use expressions which fail to yield any meaning when we try to realise them. Philosophers may talk till they are hoarse, but they will never make 'thought' do duty not only for thought but also for sense and feeling and will. Professor Jones himself admitted lately, in an article on Lotze published in the *New World*, that 'thought' is an inapt and unfortunate term as an expression of what the Idealists mean. Commenting on Lotze's opposition of experience or 'the whole mind' to thought or thinking, he added: "This is a change of terminology which Idealists would not care to oppose. In fact, 'whole mind' or 'spirit' expresses their meaning less ambiguously than 'thought,' in so far as the former terms cannot be easily

confused with the purely formal faculty of the logician." And he further spoke of "the idealistic identification of reality not with abstract thought but with spirit and its manifold activities." It is disappointing, therefore, to find him throughout this volume using Thought in the traditional Hegelian sense, which has been prolific of so much confusion. The outcome of this usage is the reduction of the world to a system of thought-relations, as we find it in Green's laborious, and after all ineffectual, attempt to eliminate the function of sense in perception. And I cannot help thinking that in one passage of the present volume Professor Jones (though in general he pursues a different method) has fallen back into this species of Neo-Kantianism[1]. Though we may be able to say nothing of sense as sense (and this lies in the nature of the case) the difference between perception and conception remains fundamental and irreducible. The one is immediate relation to, or experience of, reality, the second is a mediate relation, which may doubtless give a fuller and truer account of the real, but which depends for its whole meaning—and for its existence—upon the primary and vital relation of perception. Green is obliged to fall back surreptitiously upon the sense-data which he seems afraid openly to acknowledge. In various passages Professor Jones fully recognises the necessity of *two* factors—"sense" and "thought." "Sense, by itself," he says, "gives as little as thought by itself. The whole problem lies in the nature of the relation between these two factors. No one now can well deny the need of either, and the difficulty which we have to meet is how to conceive of both so as to enable them to cooperate and produce the concrete fact of knowledge, in which form and content interpenetrate....Hegel and his followers would find a unity beneath their differences, and regard that unity as best characterized by the term Thought or Spirit" (p. 300). Here he gives us, it is true, the alternative of "Spirit," but in other passages he talks of "the Idealism which found nothing in the world except thought" (p. 99), of "the Hegelian view that thought is a constitutive and concrete reality" (p. 287), of "the truth of Idealism which makes thought think thought" (p. 154). Now surely if the living whole consists of thought *and* sense, it cannot but provoke misunderstanding to give to the whole the name of one of the factors. To say that thought thinks thought, that there is nothing in the world except thought, cannot but be taken as an attempt to evade acknowledgment of the facts of sense. Yet that acknowledgment finds its way into the statements of even the most uncompromising idealists. Thought cannot

[1] The passage to which I refer is on pp. 101—2. In his reference to "the work done by modern psychologists, not to mention that of Kant" as "revealing the poverty of the supposed material and the significance of the work done upon it by intelligence," he distinctly recalls Green's method of analysing our apparently immediate perceptions into a set of thought-relations. But it is to be remembered that the complexity which modern psychology reveals is entirely upon the associational plane.

get to work unless it has a "material" (p. 105), unless it has "elements of sense" to work upon (p. 104). It "seizes upon an indefinite reality and articulates it into system" (p. 359); but the articulation cannot proceed unless the reality is somehow given in order to be seized. Professor Jones also speaks quite freely at times of "the sensuous and the intelligible elements" of experience (p. 335), or, what is the same thing in other words, of "the content and forms of our experience" (p. 303). He speaks of conception as abstracting from "our sensibility," and in one place he says that what he has tried to show, as against Lotze, is that the "immediate forms of knowledge [perceptive feeling, etc.] could not *supply thought with its necessary data* unless they were armed with all the powers of thought *as well as with those which are peculiar to themselves*" (p. 325). He here admits that thought requires data, that these data are supplied by immediate forms of knowledge, and that these immediate forms of knowledge have powers peculiar to themselves.

But the form in which he clothes the admission enables us, I think, to understand what he and other idealists are really fighting for under cover of an unfortunate terminology. He is contending for the inseparability, the mutual implication, of sense and thought, which seems to him to be threatened by the emphasis which Lotze and others lay upon the contribution of sense. Sense seems to him to be asserted as a source of data altogether alien to intelligence and to be put forward as the sole depository of reality; and this is either to play into the hands of a sensationalistic scepticism or to evoke the spectre of a hopeless dualism. As against such a supposed position Professor Jones contends, in words already quoted, for "the mutual implication of the content and forms of our experience." When Lotze says that "what is good and evil can as little be *thought* as what is blue and sweet," and asks whether the essence of love and hate can be exhausted in concepts, he retorts by asking "whether love and hate and blue and sweet can be given *without* thought." The answer, he says, is obvious; "sense, by itself, gives as little as thought by itself." To this way of stating the case I, for one, have no objection, and I cannot think that Lotze would have denied the position. So, again, in regard to the relation of thought and reality—which is another form of the same question—what Professor Jones proves, and what he has doubtless really at heart, is the necessity of acknowledging *ab initio* what he calls in one place their "ontological affinity" (p. 334): "If the world is to reveal itself to man's thought, it must have ontological affinity to his thinking powers." Just as we must acknowledge the "correspondence and mutual adaptability" of sense and thought, or in other words the "ontological relation between the two elements of knowledge" (p. 329), so we must not treat the world as a reality independent of thought and unrelated to thought; for in that case it would of necessity remain to the end unknowable by thought. Here again I have nothing to object to, but why does Professor Jones go on to obliterate distinctions and re-invoke the

old confusions by translating "ontological relation" into "ultimate identity" (p. 330) and speaking of sensation and perception not only as "essentially related to thought," but as "identical with" thought? Surely there may be necessary relation without identity; in fact, if there were identity, the relation would be impossible. Thought and reality are not the merely different, but neither are they the merely identical. Moreover Professor Jones's relapse into such phrases is inconsistent with what he says of the value of Lotze's criticism of the idealistic position[1]. And I should like to add that in insisting on relation, while denying identity, I am not actuated by a precisian anxiety about a word or phrase; for as soon as we speak of identity, the way is prepared for that sublimation of experience into the world of mere "thoughts," which Professor Jones condemns as strongly as anyone. I find Professor Jones himself upon this dangerous inclined plane in his attempt to explain away the difference between perception and conception, or to maintain, at least, that the difference "is only a difference in degree of definiteness" (pp. 346 *et seq.*). "Redness," he says, "if we contrast it with colour is a particular perception, but if we contrast it with its own shades of crimson, scarlet and so on, it is a universal conception." But we are moving here altogether in a world of conceptions. Red is a concept whether we contrast it with colour in general or with its own shades; the percept red is always a particular shade of red, though we may not stop at the moment reflectively to particularize it. The concept crimson or scarlet itself does not reach the inexhaustible particularity of its own sense-presentation, as that is constituted by what Professor Jones calls the "aggressive relations of time and space and our sensible affections." These relations and affections may be "comparatively insignificant to the true understanding of things," but it hardly becomes us to complain of their "aggressive" character, seeing that they are, as it were, the tissue in which the real world is given to us. I heartily agree with the contention that we must not regard perception as giving us the truth of reality once for all, and conception as leading us on a path of abstraction further and further away from the nature of things. Our conceptual account of the world, as formulated by the sciences, and ultimately by philosophy, is nearer the truth than the inadequate judgments of perception with which we start. In this sense, the process of knowledge is continuous; it is, as Professor Jones says, "a process of discovering distinctions within an indefinite subject" (p. 362), or

[1] "Hegel, as against his predecessors, opposes mainly the tendency so to separate the real and ideal as to obscure or annul the principle which reveals itself in both of them; Lotze directs his main attack against what he conceived to be their immediate identification by Hegel. And it is this which, in my opinion, makes him so valuable as an expounder of Idealism, and helps us to know more clearly than Hegel's immediate successors what he meant by the principle of thought which he identified with the principle of reality" (p. 273).

the "articulating into system" of "an indefinite reality" (p. 359). But it is still true that conception has only a mediate relation to reality, while in perception there is an immediate relation. We cannot explain in what this direct experience consists, for that would be to make it mediate—would be, in fact, to dig up the roots of our own life. All we can say is that without this direct contact with reality, or rather this immediate presence of reality in us, there would be no subject within which to discover distinctions, no reality to articulate into conceptual system. The distinction, therefore, between perception and conception is not only "undeniable within its own limits," it is primary and fundamental, and the attempt to minimize, if not to obliterate, it seems to me perhaps the most questionable and dangerous part of Professor Jones's book. In one sense, as explained above, it is true to say that reality, *i.e.* the true account of reality, is reached only at the end of our scientific and philosophical analysis; but, in another sense, it is as true to say that reality is given in perception or immediate experience and given there alone. Lotze may not sufficiently distinguish these two senses, but they are not in themselves inconsistent, as Professor Jones seems to think (p. 356).

I have left myself no space to comment upon the more detailed criticism of Lotze's logical doctrines; but for penetrative analysis the chapter on Lotze's theory of the Judgment (chap. iv.) is one of the best in the book. The laboriously artificial theory into which Lotze is led by his start from pure identity is successfully shown to reduce Judgment in the end to a useless tautology—except so far as Lotze supplements his original principle by that of Sufficient Reason, which is tantamount to the idea of a system of related elements. Professor Jones justly censures Lotze's characteristic method of patching up the defects of one principle by supplementing it by another. In this case, the second principle, which alone makes thought possible, is treated by Lotze as a fortunate accident(!) and the two are left standing inconsistently side by side. Chap. v. contains a very full exposition of Lotze's theory of Inference, which is submitted to criticism in chap. vi. "The symbol of inference is not mechanical connection but organic growth. It is the evolution of the contents of a single, though not a simple, idea; and evolution neither admits of anything new nor simply repeats itself." The fundamental function of thought consists "not in connecting the discrete but in differentiating a unity." This view is convincingly driven home throughout the chapter, which contains a luminous account of the actual reasoning process. Lotze's theory is found to be involved in contradiction because it starts from the opposite view, that the operation of thought consists in connecting the discrete. It is the same view which leads him in his account of Judgment to the verge of declaring that predication is either idle or impossible. In his account of inference the same dominating idea is seen in his attempt to escape from this conclusion by passing from Subsumption to Substitution. Substitution, as Professor Jones observes, "is not

inference at all. It is rather the result of a process of inference. The mathematician will not substitute $a+b+c$ for $x$, unless he has already ascertained that they are equivalent; and the process of inference lies in the discovery of that equivalence, after which the act of substitution may follow as a matter of course" (242). It must be admitted, I think, that Lotze's account of inference is vitiated by the original sins of his theory of Judgment, but I am not sure that Professor Jones's account of the advance of knowledge is, at bottom, so different from Lotze's as he thinks. He blames Lotze for attributing all the processes that are effective in the growth of Knowledge to "sense, perception and faith" (p. 267)—"intuitive processes resting on material knowledge" (p. 254). But when he gives his own account, that "thought has only one way of proving a truth, namely that of showing that it is already contained in the premises. And it shows that it was already in the premises *by a more exhaustive investigation of them*" (p. 243), Lotze might fairly ask whether this investigation is in strictness part of the *reasoning* process. Or, again, when he says, speaking of mathematical calculation, "the inference is in no wise *based* upon mathematical considerations, but upon the material premises; and into these premises the investigator throws all the wealth of his previously acquired knowledge of nature. And the more discriminative his knowledge, or the more systematic, or the greater the degree in which he is able to focus the light of the whole world on the problem in hand, the greater his success in developing the indefinite system which is the datum into an explicit system of necessarily relative elements. *It is consideration of the material which enables him to predict*, and to extend his universal law over cases not yet observed" (p. 262)—is this essentially at variance with Lotze's own statement that "the discovery of a universal law is always a guess on the part of the imagination, made possible by a knowledge of facts"? The difference here would seem to be in the main one of terminology. Lotze, with his analytic habit of mind, represents as the cooperative result of a number of factors what Professor Jones describes as a single living process. And if we extend a similar lenience to Lotze's account of the relation of sense to thought—upon which Professor Jones returns at the beginning of this chapter on Inference—might not a sympathetic expositor say that Lotze's prefiguring of the universals of thought in corresponding universals of sense might be plausibly interpreted as another way of saying that the real is ideal. And I cannot forbear pointing out in this connection that Professor Jones's repeated insistence here on the 'constitutive' nature of thought as 'producing' its 'content' (p. 227) turns out on closer investigation to have a modified and much more modest meaning. It is constitutive of the content "in the sense that the particulars cannot exist except in their coherence" (p. 228). It thus "comprehends and penetrates its content," but it does not constitute or creatively give its sensuous matter. This is the same conclusion as we arrived at in dealing with this point more fully above.

I do not, however, put forward these suggestions as a complete justification of Lotze's procedure, still less with any intention to minimize the value of the searching examination to which that procedure has been subjected by Professor Jones On the contrary, I think that that examination has laid bare serious defects in Lotze's statement, and that Professor Jones has, in the main, made good his assertion of two warring tendencies in Lotze's thought. Lotze is, at bottom and in his intention, it seems to me, at one with what we may agree to call the idealistic view of the universe. But he stood chronologically nearer to Hegel than we do. In his youth the Hegelian system was still a living theory, held by its adherents with a rigour and vigour of which, at this distance of time, we have little conception. To us now—even to those who are most inclined to call Hegel Master,—his system has already become historical; it is simply the last great type of Idealism or Spiritual Monism. But we do not hesitate to criticise, or simply to drop, the asperities of the original statement, and to present what we consider the vital principle in a form moulded by our own controversies and adapted to our present needs. But when Lotze began to write, time had not yet softened the outlines of the theory, and thrown its details into the shade; and he may probably be accepted as a better authority than the present generation on its original lineaments. He stood forth, in any case, as the unsparing critic of "the dialectical idyll" and the too exclusive intellectualism of the Hegelian system; and the emphasis given in his writings to this critical note, has led to his being (erroneously) regarded as fundamentally at variance with the principle of Idealism. Other characteristics of his work combined to strengthen this misconception. His mind is analytical and critical rather than constructive; and as it is his habit to begin from criticism of some popular conception or accepted theory, he seems to be always starting (to use his own metaphor) somewhere in the extreme ramifications of the subject. He seems never to weld his conclusions together from a central point of view. In a book like the *Microcosmus*, which meanders through the whole region of the knowable, this want of unity of conception becomes no less than distressing to the philosophical reader. Fresh as his criticisms generally are, and instructive as his laborious analysis undoubtedly often is, his habit of balancing conflicting possibilities and then passing to another theme, is as undeniably irritating and unsatisfactory. One cannot wonder if it produces upon many readers the impression that a solution of the difficulties has been abandoned, and that the result is simply a return to the *disjecta membra* of popular orthodoxy. And even the attempts at coordination which we find are apt to appear to thinkers of speculative and synthetic tendencies as the mechanical piecing together of elements reached by different methods and belonging to inconsistent theories of the world. I do not say that this impression is altogether just, but it must be admitted that it is not without excuse. Hence I do not think that Lotze can claim any permanent place as a thinker with a

system of his own. There is great danger that those who go to him in search of such a system, without much previous philosophical training, will miss the point of much of his finest work, and simply be strengthened in their antecedent prejudices and unphilosophical beliefs. But after all these liberal deductions it remains true that, by his criticism of dogmatic materialism on the one hand and dogmatic intellectualism on the other, he has been a most important factor in guiding the thought of the century towards truer conclusions; and the reader who is in some measure abreast of the tendencies of modern speculation, will still find much in his writings that is incisive and memorable and convincingly reasoned.

I have not dwelt *seriatim* and separately with Professor Jones's concluding chapters on 'The Subjectivity of Thought' and 'The Principle of Reality in Thought and its Processes.' As they sum up and bring to a focus the principles on which the whole critical argument of the book depends, they have been frequently laid under contribution in the foregoing account. But reference should be made to the criticism of Lotze's fundamental and characteristic position that "all our conclusions concerning the real world rest upon the immediate confidence or the faith which we repose in the universal validity of a certain postulate of thought which oversteps the limits of the special world of thought," or, as he puts it elsewhere, "As regards the ultimate principles which we follow in this criticism of our thoughts, it is quite true that we are left with nothing but the confidence of Reason in itself, or the certainty of belief in the general truth that there is a meaning in the world." To put it otherwise, it is only the Good which has in itself the complete right to be, and this is recognised in a judgment or postulate of value, which carries us beyond the merely intellectual region into the domain of feeling. But Lotze nowhere says, as Professor Jones makes him say, that this judgment is possible "apart from and without the co-operating activity of thought." He only says that it would be impossible to a thought which was not coloured by feeling. The criticism here seems to me, therefore, hardly fair to Lotze, especially as Professor Jones seems unwilling to deny that the Good and the Real may be taken as identical and metaphysics ultimately based upon ethics (p. 295). And when in his concluding chapter (the robust realism of which I have already signalized) Professor Jones says that "the only way to reach reality at the end of the process is to take our departure from it" (p. 334), or again that Idealists "have made this conception of the systematic and rational coherence of reality their starting-point, in such a manner that they do not doubt, any more than men of science do, that the endeavour of thought will lead to truth, or that reality will yield its treasures to the inquiring intellect," and that hence they "return once more to the attitude of ordinary consciousness and of science, and commit their thinking to the guidance of fact"—may it not fairly be asked whether this "starting-point" is not itself of the nature of faith? Doubtless it is a necessary assumption, and one which the advance

of knowledge, in particular the growing coherence of knowledge, tends more and more to confirm, but is it not ultimately a trust, a supreme hypothesis?

ANDREW SETH.

---

*L'Amitié Antique d'après les moeurs populaires et les théories des philosophes.* Par L. DUGAS, Docteur ès-lettres. Paris: Félix Alcan, 1894. Pp. 454.

NOTHING is more significant of the difference between the life and manners of antiquity and modern times than the attention bestowed by ancient philosophers upon the Theory of Friendship. The practical side of the subject frequently engaged the attention of Socrates, as we learn from the *Memorabilia*: to its theoretical aspect Plato devotes an entire dialogue, not to mention sporadic references elsewhere, and Aristotle about one-fifth of his *Nicomachean Ethics*: while a host of *dii minorum gentium*, Stoics, Epicureans, and Eclectics, delight to pursue the same topic into the minutest questions of casuistry. M. Dugas is to be congratulated upon his attempt to give within the compass of a single volume a fairly complete historical sketch of so important a part of the ethical theory of the ancients.

A treatise on Friendship in ancient life is however in no small measure concerned with topics which would not now be considered as properly belonging to this subject. The Greek φιλία embraces not only friendship in the modern sense of the term (φιλία ἑταιρική), but also the passion of love (φιλία ἐρωτική), and the philanthropical sentiment (φιλανθρωπία). M. Dugas, while devoting the larger part of his book to the discussion of φιλία in the first of these meanings, does not forget to do full justice to the last two departments of the subject.

The work is divided into two Books, professing to deal respectively with the facts to be considered and with the theories deduced from them, or excogitated *a priori*, by ancient writers upon ethics. As the theorists are frequently our chief authorities for the facts, it is perhaps natural that M. Dugas' division should occasionally break down. But on the whole the distinction is a clear one, and it is well maintained throughout the greater part of the discussion.

Of the two books, the first is the more interesting and original, if not the more learned and laborious. After briefly considering the half-physical, half-metaphysical *rôle* played by friendship (or harmony) in the systems of Empedocles and Heraclitus, together with Plato's physical explanation of desire (ἵμερος) in the *Phaedrus*, and the Aristophanic myth in the *Symposium*, M. Dugas points out how the primary philosophical conception of φιλία as a principle operating throughout the whole universe was gradually transformed into the narrower idea of a personal relation between individuals. The greatest and most fruitful impulse to friendships of a pure and

exalted nature was furnished by the schools of philosophers, and one of the best chapters in M. Dugas' treatise is that in which he describes the relation between friendship and education. It was a cardinal principle among the philosophical educators of Greece that teacher and pupil should be affectionate friends. M. Dugas acutely remarks that the real ground of Socrates' and Plato's severity to the Sophists was that by taking money for teaching virtue they deliberately ignored this fundamental principle. Professional and technical instruction is a sort of barter, and mutual enemies may buy and sell among themselves; but, where liberal education (παιδεία) is conceived, the exaction of a fee prevents the formation of those ties of affection without which all instruction is valueless. "Le sentiment," says M. Dugas, "que Socrate éprouve à l'égard des Sophistes rappelle celui de Jésus chassant les marchands du temple. Sa conception originale, mystique, de l'enseignement philosophique le portait à voir dans le gloire et le gain qu on retirait une profanation. En somme, au point de vue moral, Socrate a raison contre les Sophistes; l'hétairie est pour les Écoles philosophiques un mode d'organisation supérieur à celui qui existe parmi nous. L'erreur de Socrate est de n'avoir pas reconnu le salariat comme une nécessité économique." The author should have reminded his readers that in ancient society, thanks to the institution of slavery, salaried instruction was far from being an economical necessity. The fact that it is so now may be in part responsible for many false ideals of education. Salaried teachers, subject to all that salary involves, are apt to forget what the noblest educators of Greece well knew—that

> "the Gods approve
> The depth and not the tumult of the soul."

From the atmosphere of the schools, M. Dugas passes to the camp and the palaestra, the sphere in which ἐρωτικὴ φιλία played the most prominent part. He reminds us that "les anciens ne donnent point place à l'amour dans la vie conjugale." Marriage was an institution designed solely παίδων ἐπ' ἀρότῳ γνησίων; passionate friendship sought its satisfaction elsewhere. In his discussion of this thorny subject, M. Dugas is admirably sober and judicious. While making every allowance for the modern virtue of reticence, he in no way minimises the great chasm which separates ancient from modern opinion on matters of this kind. Without faltering in his condemnation of vice, he nevertheless recognises the historical fact that immorality in Greece was frequently associated in a remarkable degree with deeds of heroism, and his analysis of the phenomenon shews much insight and power of intellectual detachment. In dealing with the Platonic position upon this subject, we could wish that he had brought out even more emphatically than he has done the essential antagonism of Plato to this phase of Greek life. As an idealist, Plato should be judged by his moral ideal; and little weight should be assigned in elucidating his views to those glimpses from the real which form the setting of some of

his smaller dialogues, or provide dramatic interludes in others. The intellectual emancipation of women in the *Republic*, though intended to subserve other ends, would under the modifying influences of practical experience have created a state of feeling hostile to the vices of the gymnasium, by making woman the help-meet of man. The nearest approximation to the modern point of view is to be found in Plutarch, who recalls the vagrant Ἔρως to his natural home, without any serious sacrifice of the element of romance; but it was characteristic of Plato's hopeful idealism to think that the vicious element in the Greek Ἔρως could be eradicated without losing any of the wheat that sometimes grew along with the tares; when (in the *Laws*) he would burn them both together, the optimism of youth and early manhood had been sobered by the experience of a lifetime.

In the second division of his subject, M. Dugas examines the psychological and ethical theories of the ancients on the subject of friendship, together with the leading questions of casuistry to which the application of these theories in practical life gave rise. The ancient theorists regarded the essential and characteristic feature of friendship as consisting in its voluntary nature: it was the one great personal and spontaneous impulse of antiquity. We cannot choose our parents, our brothers; but we can choose our friends. It was partly for this reason that friendship set the ideal standard for the domestic affections. "Les affections naturelles doivent se régler sur elle. Nous dirions aujourd'hui: 'Il faut aimer son ami comme on aime son frère, ses parents'; les anciens disaient: 'Il faut aimer ses parents comme on aime ses amis'." The psychological explanations of friendship vary in the successive schools with the philosophical attitude of each; but in the long run the general result is to bring into clearer relief the part played by the will and the reason in the formation and maintenance of this affection. Socrates, whose treatment of the subject is almost wholly practical, insisted strongly on the duty of selecting friends on rational principles. In Plato, Friendship and Love are difficult to disentangle. We may say that the final, and indeed the only object of Love, is the Idea of Good; and Friendship is the avenue to Love. True friends are united by an affection which ultimately merges in the love of the absolute, as described in the *Symposium* (210–212)—a love which is an *amor intellectualis*, and which therefore cannot originate in any friendship contracted from non-rational motives. With other than ideal friendships, Plato does not greatly concern himself; in Plato, 'ought to be' means 'is.' Aristotle, whose exhaustive and luminous treatment of the subject receives full justice at the hands of M. Dugas, reverts to the Socratic conception of friendship as a personal relation between individuals, destitute of any transcendental aim; but true friendship, according to him also, is based on grounds of reason, and can only subsist between the good. Epicureanism first strikes a jarring note in founding friendship solely upon interest and pleasure; but in the curious theory of some

heterodox Epicureans, that friendship rests upon a contract between the individuals, the action of the will and reason reappears, at least in the initial stages of the affection. Of the Stoics I shall speak presently.

M. Dugas' examination of the ethical theories of the ancients on the subject of Friendship brings some interesting points to light. The lesson which these theories convey is that Friendship was originally conceived as a force opposed to Justice, but gradually paved the way for Justice by its growing association with Virtue. "Do good to friends, and evil to foes" was the fundamental principle of early Greek morality. The Socratic teaching, though perhaps essentially self-regarding (in the higher sense), prepared the way for the higher conception of man's duty to his fellows, which meets us in Plato. Justice, according to him, is incapable of doing evil, even to enemies. This is abundantly clear both from the *Gorgias* and from the first book of the *Republic*; and it betrays a certain want of aptitude for Platonic criticism when M. Dugas takes seriously the extravagant statement (in the *Gorgias* 480 E–481 A) that one should endeavour to get an enemy acquitted before an earthly tribunal in order that he may be eternally vicious and miserable. The words εἰ ἄρα δεῖ τινα κακῶς ποιεῖν, with which this fantastic suggestion is introduced, shew clearly that Plato only meant that *if* one ought—*as one ought not* (ἄρα)—to evil entreat any one, a far more subtle and effectual way would be to confirm him in his vice by helping him to escape its legal penalties than by curing him through punishment. To regard Plato as capable of such a monstrous refinement of cruelty is wholly to misunderstand his place in the history of Ethics; and we hope that in a future edition of his work M. Dugas will see fit to rectify this mistake. The author's review of Aristotle's theory of friendship on its ethical side brings once more into prominence the stress which Aristotle lays on virtue as an essential condition of true friendship, and with a *résumé* of the Stoic deliverances on the subject M. Dugas concludes this section of his work.

The next two chapters contain an exhaustive account of the casuistry of Friendship, but raise few questions of any philosophical importance. M. Dugas shews very clearly how the casuistry of the subject for the most part aimed at determining in how far the ideal aimed at by most of the schools could be legitimately modified to suit the special needs and circumstances of human life. The treatise concludes with a recapitulatory chapter, and some reflections on the disappearance of ancient friendship.

From what has been said, it will be seen that M. Dugas' book is in the judgment of the present reviewer a solid and attractive piece of work. The defects which we have pointed out are only incidental: they do not affect the value of the work as a whole. Except (we think) in his treatment of the Stoics, M. Dugas is remarkably judicious in his appreciation of the different schools of philosophy. To us he seems somewhat to overestimate the value of

the Stoic contribution to the theory and practice of Friendship. The ideal friendship of the Stoics has little in common with either the ancient or the modern conceptions of that relation. The wise man has no need of friends; he is sufficient to himself. The benevolent tolerance with which he regards his fellow men, though it may be a kind of academic philanthropy, is far from being friendship; and if he admits any to a nearer intimacy, it is for their sakes, rather than for his own, or if for his own, in order merely that he may have a field for the exercise of one of the chiefest virtues—*si nihil aliud, ut exerceat amicitiam, ne tam magna virtus iaceat*, as Seneca remarks. The flower of friendship will not bloom on the rugged heights of Stoic idealism. It is only when Stoicism descends from those heights, when προκοπή begins to encroach upon Virtue, and the ἀδιάφορον προηγμένον upon Good, that friendship, in any real sense of the word, makes its appearance. M. Dugas regards the Stoic theory of Ἔρως as a return to Platonism. Apart from a few isolated phrases, which shew that some of the Stoics occasionally rose above their theories, there is little to justify this view, and many of their utterances on this subject contain an element of grossness entirely foreign to Plato. Even the *amores sancti* which, as Cicero tells us, were permitted to the wise man, inspire a feeling of disgust; we think them, not so much *sancti*, as sanctimonious. No return to the Platonic Ἔρως was possible without returning to the Ideas, which the Stoics rejected with contempt. In general, it is fallacious to regard the Stoics as akin to Plato. Both were, in a sense, idealists; but whereas the Ideal of Stoicism was passionless, cold, always dying if not already dead, that of Plato was warm with human life and feeling. This is why the motive power of Platonism lies in its ideals, whereas Stoicism had most influence when its ideals were compromised in deference to human needs.

J. Adam.

---

*Einleitung in die Philosophie.* Von Oswald Külpe, Professor an der Universität Würzburg. Leipzig: S. Hirzel, 1895. Pp. viii. 276.

One of the needs most keenly felt by teachers of Philosophy at present is for a text-book to accompany a course of lectures on the general problems of Philosophy and on the nature and interconnexion of the special philosophical disciplines. Professor Külpe's work is an attempt to meet this need, and in our opinion it is a successful attempt.

The first chapter treats of the definition of Philosophy and of the division of its branches. Current definitions are examined and they are all pronounced to be inadequate formulations of the actual historical development of philosophical enquiry, and of its present

position. They do not give expression to the historical facts, but rather to the peculiar views of independent thinkers. They sum up the aims of individual philosophers instead of presenting the essential characteristics of Philosophy. Prof. Külpe refrains at this stage from putting forward a definition of his own. He rightly prefers to postpone the inquiry until the student has been prepared by a general survey of philosophical problems and doctrines to understand the nature of the answer and to appreciate its value. The difficulty of finding an accurate and adequate conception of Philosophy is also a difficulty in the way of an accurate and adequate classification of its various branches and subdivisions. It is however part of Külpe's plan to pass in review at the outset the several Philosophical disciplines as they are actually studied and taught at the present day. He therefore finds it necessary to give such division of this material as will enable him to deal with it in an orderly way. In view of this practical exigency he proposes a provisional division of Philosophical disciplines into those which are *general* and those which are *special*. The *general* are concerned with the whole field of human knowledge, and aim at examining its presuppositions, or at unifying and supplementing it: the *special* endeavour to fulfil similar functions for certain limited branches of science.

The title of Ch. II. is "Die philosophischen Disciplinen." Metaphysics, Theory of Knowledge, and Logic are classed as general philosophical lines of investigation. The problem of Metaphysics is to construct a "Weltanschauung," a systematic view of the world as a whole framed in accordance with existing knowledge and adapted to the practical as well as to the theoretical needs of the age. Epistemology deals with the most general *contents* of knowledge considered as a product, not as a process. It subjects to scrutiny the fundamental conceptions which form the logical presuppositions of the special sciences and are assumed by them without adequate criticism. Logic differs from Epistemology in as much as it treats of the formal procedure of the sciences and not of their objective content. Professor Külpe scarcely seems to realise the difficulty of maintaining this distinction. Under the head "Special Disciplines" are included Philosophy of Nature, Psychology, Ethics, Æsthetics and Philosophy of History. Each of these is regarded under two aspects: (1) as a particular science having its own specific aims and methods: (2) as affording scope for logical, epistemological and metaphysical discussion. The whole treatment of the philosophical disciplines is illuminated by illustrative details and by historical references.

The third chapter constitutes the most important part of the work. It enumerates in systematic order the various philosophical tendencies of the present age, traces their past history briefly and clearly, explains their nature and significance with lucidity and accuracy, and institutes a critical comparison of the value of their conflicting claims. The order of treatment is guided by the broad distinction between metaphysical, epistemological and ethical tend-

encies. The metaphysical embrace five groups, two belonging to general philosophy, and the other three to the philosophical treatment of certain special problems. The divergence of views as regards the *number* of principles of explanation which are assumed in the construction of a "Weltanschauung" yields the antithesis of "Singularism" and Pluralism. In the next place conflict of opinions may refer to the nature of the postulated principles. These may be either principles of being or of becoming. The principles of being may be either material or mental, or both, or a *tertium quid* connecting the two. Hence arise the divergent tendencies, Materialism, Spiritualism, Dualism and Monism. The contrast of efficient and final causes belongs to the sphere of becoming, and gives rise to the antithesis of mechanical and teleological points of view. The three special groups of metaphysical tendencies centre round the three special conceptions—of a supreme being, of free-will, and of the soul. The corresponding points of view are (1) Pantheism, Theism, Deism and Atheism, (2) Determinism and Indeterminism, (3) the rejection or acceptance of a soul-substance (distinguished by Külpe as "substantiality" and "actuality" theories), and also the voluntarism which makes will the fundamental activity of mind, as opposed to the intellectualism which assigns this position to cognitive process. Külpe notes that though tendencies belonging to the same group cannot, as a rule, be consistently combined in the same system, there is no such exclusive opposition between tendencies belonging to different groups. This point, together with many others, is illustrated by reference to the history of Philosophy.

The classification of epistemological and ethical lines of thought is characterised by similar thoroughness and clearness.

After the general classification there follows a separate discussion of each group of tendencies. On the whole this part of the work is admirably executed. The various views are lucidly defined and the reasons for and against them are impartially stated. Perhaps the weakest section in this respect is that on Singularism and Pluralism. Professor Külpe is wrong in stating that Pluralists have not attempted to show that their point of view is in principle the only correct one. For example, Leibniz and Herbart both argue that we find everywhere in nature composite things, that the reality of a compound is based on the reality of its components, and that we must therefore posit the existence of ultimate simple beings as the basis of any constructive explanation of the world as it appears to us. On the other hand the advocates of a single ultimate reality urge that no finite existence can be or be conceived except in relation to the whole. For them the reality of the parts depends on that of the whole and not inversely, as the pluralists assume. This is the point of their contention as found in Spinoza, Hegel, and in such modern writers as Mr F. H. Bradley. The four arguments attributed to them by Külpe are at most subsidiary. The most delicate part of Dr Külpe's task is the critical balancing of competing theories. Some of his rulings we cannot accept. But his attitude is through-

out candid and judicious. The criticism of Materialism is excellent and well adapted for the beginner. The treatment of Spiritualism does not seem to us to be so good. He defines it correctly enough as a theory which in ultimate analysis reduces all the data of experience and, in particular, the material world, to some kind of psychical existence or process. He admits that such a view cannot be positively refuted and that in this respect it is superior to Materialism. But he argues that it involves an arbitrary and improbable interpretation of physical phenomena. It presupposes, according to him, that in the elements of matter "there slumbers a specific masked reality, which is to be conceived as analogous to our own consciousness." Now it should be noted that whatever may be thought as to the logical claims of this doctrine, *Spiritualism,* or, as we should prefer to say, *Mentalism,* does not stand or fall with it. Either there is or is not such an internal reality behind the material phenomena presented to our senses. If there is, it is difficult to see how it can be otherwise conceived than on the analogy of our own conscious experience. If there is not, then the sensory phenomena are all that exist, and these are reducible to modes or forms of our own experiences, to sensations and permanent possibilities of sensation. This reduction cannot of course be legitimately made by simply treating whatever is apprehended by a cognitive subject, as being *eo ipso* a mere modification of his consciousness. On the contrary, the existence of an object of knowledge never wholly coincides with the existence of the subjective state in and through which it is known. The point is that if a "hidden reality" be denied to matter there is nothing to constitute the object, there is no stuff of which it can consist except the experiences of conscious subjects and the laws of their coexistence and succession.

The criticism of Monism is trenchant and in the main cogent. It is however difficult to distinguish some of its phases as defined by Dr Külpe from what he calls Spiritualism. The theory which he himself favours is Dualism. In his view mind and body are distinct existences which act on each other. The will actually originates movement and physical impressions produce sensation by acting on the mind as an existence really distinct from the brain. Külpe defends this somewhat antiquated position in an interesting way. But in our opinion he does not fully appreciate its difficulties. However, for the purposes of the lecturer who follows the lines of Mentalism or Monism, it will probably be an actual advantage to have the opposing view so ably stated in the text-book used by students. In general, it may be said that the usefulness of Dr Külpe's work is but little affected by his personal bias in favour of particular theories.

Throughout the volume good lists of books of reference are appended to the several chapters and sections. In a work written primarily for the use of German students it is natural that German references should preponderate. But it is difficult to see why certain English

works should be introduced and others omitted. Bradley's *Principles of Logic* deserves mention in connexion both with Epistemology and with Logic proper; but it nowhere finds a place. Ward's psychological work is nowhere mentioned, though a place is found for Bain and James. Sidgwick's *Method of Ethics* is referred to repeatedly; but his *History of Ethics*, admirably adapted as it is to the needs of the beginner, is not mentioned along with the bulkier books of Ziegler and Jodl.

It is to be hoped that someone will be found to translate Prof. Külpe's work into English. To use a hackneyed phrase, it "supplies a much-felt need."

EDITOR.

# VII.—NEW BOOKS.

*The Essentials of Logic.* By Bernard Bosanquet, M.A., LL.D., formerly Fellow of University College, Oxford. London: Macmillan & Co., 1895. Pp. 167.

The importance of this little book is not to be measured by its size. Many people write big works upon Logic, which comparatively few are courageous enough to study seriously. The student who approaches them unprepared is daunted by the mental strain involved in the preliminary chapters, and despairs of maintaining the effort throughout a large—or, it may be, two large volumes. Then he takes refuge in cut-and-dried little primers, which, however uninspiring they may be, have the great recommendation that he can at least see to the end. And indeed formal Logic, as embodied in the primers, presents no serious difficulties to anyone who has grappled with the Elements of Euclid. But unfortunately the ordinary Logic primer does not lead the student very far. At first he will be interested, for it must be an unusually chaotic mind which is not pleased—perhaps rather childishly—with the appearance of order which even the most ordinary text-book can impart to thought; to the untrained it is a wonderful discovery to find that all his utterances are capable of being forced—with more or less ingenuity—into the form *S* is *P*. But this is a pleasure which soon palls, and whether our interest is maintained for any more important study depends upon whether our teachers can lead us on to find a deeper significance beneath the old forms. It is from this point of view that Mr Bosanquet's book appears to us most valuable. It makes no claim to exhaustiveness, but rather indicates the way to inexhaustible fields of thought, and stimulates the reader by its suggestive brevity to continue his explorations further.

The attitude of the author towards his subject may be illustrated by a quotation from another lecture of his. The science of Logic has, he tells us, always possessed for him "an extraordinary fascination, only to be compared with the fascination of the study of organic life. To stand at the growing point of the intellectual organisms, as you may watch the growing-point of a plant, and to observe the cell-nucleus of thought as it enlarges and subdivides and differentiates itself, and acquires a positive structure, in the process by which the fragmentary perception completes itself like a living thing, and rounds off into a science—this is a spectacle which seems to put before us in its purest and clearest form the evolution of which all existence is a type."

To indicate the scope of the book we will touch briefly upon the main points with which it deals. Its object is "to explain the nature of that single development which in some stages we call Judgment and in others Inference; and the first two lectures are occupied in placing the student

in a position from which he can recognize the active part played by Thought in the construction of Reality. The problem of Logic arises when we consider "what is the connection between...a course of consciousness in any individual, and the world as that individual knows and wills it;" and in developing the meaning of "idea" and "world" the philosophical theory that "the objective is what we are constrained to think in order to make our consciousness consistent with itself," is contrasted with the different conceptions accepted by practical common sense, and common sense theory respectively.

It will be seen that Mr Bosanquet approaches the subject at a different point from that presented by most logicians, who are content to begin with the explicit judgment as expressed in the proposition. In Lecture II. on "Judgment as Consciousness of a World" the essential unity of the function of knowledge as a constructive process of interpreting perception is dwelt upon, and emphasis is laid upon the fact that "the common logical judgments...are simply those parts of this continuous affirmation of consciousness which are from time to time separately made distinct." The significance of this way of taking up the subject lies in its value for the principle that the ultimate subject of judgment is always Reality, and the tendency of Judgment to be a definition of Reality.

The third lecture treats of the relation between Logic and Knowledge, and explains in what sense it is that Logic is "formal." The essential distinction between Logic and Science is emphasized by a criticism of Jevons's view of every science as a particular logic; and then follows an interesting discussion on the relation between form and matter in knowledge, and more especially of the vital relation between whole and part, as one instance of Identity and Difference. The brief survey of the ground gained at the end of this lecture is particularly instructive.

We do not really enter upon the familiar Logic of the text-book until Ch. v., which deals with the proposition and the name, and this is introduced by a somewhat difficult but important lecture on the general conditions involved in assertion. The perplexing question of the exact nature of the part played by the idea in judgment is presented, and the distinction explained between the idea as a psychical presentation, and the idea as an identical reference which is the object of thought and is represented by the word. An idea in this latter sense is not an abstract image but a concrete habit or tendency, and can only be displayed in the judgment, *i.e.* in a concrete case of reference to reality; and it is this reference beyond their mental existence which makes it possible to claim truth for ideas. Thus the way is prepared for the logical treatment of the judgment as expressed in the proposition, and of concepts as having their only reality in living thought when referred to their place in a judgment; and the bearing of this view upon the doctrine of Connotation and Denotation is discussed. The discussion is very suggestive throughout, especially perhaps in pointing out the real meaning of the generic name, not as *omitting* the properties in which species differ, but as representing the general plan to which they conform.

In the sixth lecture the unity of the judgment is further illustrated, the copula banished, and the true nature of Subject and Predicate explained. The way is then clear for a consideration of the different types of judgment which is guided by the principle that "we want to look at the judgment on its merits with reference to its power of expressing the principal kinds of our experience," that is, Perception, History and Science. The remaining lectures are occupied with Negation, Inference and Induction; and perhaps the central idea running through them is that of System as the ultimate condition of all inference. In this way are explained the distinctions

between guesswork and demonstration, and between enumeration and scientific induction, and the importance of the negative instance is brought out.

It is perhaps only fair to say that the lectures assume (perhaps more than the writer is quite aware) a preliminary, or concurrent study of at least the elements of psychology. At any rate we are sure that such a study would greatly help the student in his work. The lectures may, however, fairly claim to have tested their value for beginners. They were originally given as a course to University Extension Students, to many of whom it was a first introduction to the subject, and whose sustained interest sufficiently marked their appreciation.

H. DENDY.

*The Elements of Metaphysics. Being a guide for lectures and private use.* By Dr PAUL DEUSSEN, Professor Ordinarius of Philosophy at the University of Kiel, Germany. Translated from the second German edition by C. M. DUFF, with an appendix, *On the Philosophy of the Vedânta in its relations to Occidental Metaphysics*, reprinted from the original edition, Bombay, 1893. London: Macmillan, 1894. Pp. ix. 337.

This is a work of quite uncommon interest—from the historical point of view—and its appearance in English dress will be welcomed by all truly catholic students of philosophy. Our philosophical text-books, whether from the ignorance or—which is much the same thing—the narrow sympathies of their authors, or from the exigencies of examination purposes, have far too long been drawn up as though Western civilisation had held throughout time the monopoly of effective philosophising. Here at length Messrs Macmillan have placed in the hands of English-reading students of philosophy a work containing the sketch of a system of metaphysics which draws its inspiration as much from at least one of the great religious philosophies of India as from the thought of Greek and Semitic sages. The system, it is true, is a condensed, simplified and systematised *résumé* of Kantianism and Schopenhauerism, but it is referred at every stage to parallel concepts not only in Greek, especially Platonic philosophy, and Biblical Theology, but also and yet more in the monistic or pantheistic Vedântism of India. This is a phenomenon very significant of a widening in the philosophic horizon, only perhaps to be paralleled by the announcement of Dr Deussen's forthcoming *Allgemeine Geschichte der Philosophie*, in which the first part, instead of wiping off the Pre-Socratics, Plato, and Aristotle, is only to carry us up to the Upanishads.

To the English student of mental and moral philosophy the book is further valuable—again from the historical point of view—in its presentation of the subject of metaphysics, ontology and epistemology from a standpoint characteristically German. In this respect it forms an interesting sister volume to Messrs Macmillan's issue of Professor Höffding's *Outlines of Psychology*. To the English student, nourished on the tonic diet of his Mill, there is, in all knowledge deserving the name, but one method—the scientific method of inductive analysis. The German scholar assigns a separate method for metaphysics, which he is careful to affirm is not the Empirical method—a procedure by which he reduces his metaphysics, in the opinion of Lewis, to the vapourings of metempirics—but which when scrutinised turns out to be nothing deserving the name of a separate *method*, but simply a difference of subject-matter,—the What, namely, instead of the How. To the young student this misnomer is productive of confusion of thought.

And when we contemplate the author's general method of handling this subject of the ultimates at the back of science, we cannot refrain from the conclusion that, in spite of the widened horizon he opens up, the book, as a guide in the hands of a neophyte in philosophy, would be nothing short of dangerous. Its tone is hopelessly antiquated, being that of a dogmatic rationalist of two centuries ago. So far from analysing ultimate notions, they are as calmly assumed as in any empirical science, are discussed in analytical propositions, and that by the method of mathematical formulation, which, though Spinoza unfortunately harnessed himself thereto, Descartes had perspicacity enough to relinquish. And there is no trace of that spirit of historic criticism, which discerns in the relatively abstract concepts of the modern intellect the products of the racial mind growing through countless ages on what it has found without and interpreted, now by animistic hypotheses, and now by more sober readjustments of its perspectives. If there is a subject where historic treatment is indispensable, it is surely that of metaphysics, since the subject-matter here is that of concepts, the definitions of which are only the latest links in the chains of human guesses, at different times and places, regarding the unverifiable. Dogmatic method is here entirely out of the question.

The translation is very clear and vigorous, and the translator to be congratulated. Possibly there is a slip in the rendering of German idiom in the "nothing less" on p. 313. And 'desire' is no fit rendering of 'trishṇâ' —thirst or craving (p. 113). But this mainly serves to remind us how questionable is the author's psychology which treats of will, desire, and 'trishṇâ,' as parallel terms.

*Degeneration.* By Max Nordau. Translated from the second edition of the German work. London: William Heinemann, 1895. Pp. 560.

Mr Nordau's work of applied sociology—which has already attained a wide circulation not only in Germany but also in France and Italy, and which has already attracted very much attention in this country and America through the medium of the above-cited English translation,—claims to be an attempt at a really scientific criticism of certain tendencies in modern civilization, and especially art and literature, a field left unilluminated by the researches of Professor Lombroso, whose admiring pupil the author declares himself to be. In those tendencies Mr Nordau discerns a wave of degeneration consequent on the rapid opening up of sources of nervous stimulation in modern life,—too rapid for proper accommodation to the same on the part of average human capacities of sensation. Civilized humanity will, he believes, recuperate itself before long by the self-preserving elimination of the excrescences in thought and product thrown out by these tendencies, the latter being self-destructive. But this elimination requires voluntary effort rather than passive endurance of the evolution of their decay. Else the recuperative process may be hindered to the great hurt of men.

The book is not undeserving of attention on the part of the philosophic reader, in as far as the author, in order to probe the extent and intensity of this pathological state of certain strata of the social organism in Europe, makes a diagnosis of their psychological condition, analysing at great length the development in the social consciousness of a phase of mysticism on the one hand and intense egoism or egomania (*Ichsucht*) on the other. It may be questioned how far, at the present stage of knowledge, this example and that of M. Lucien Arréat (in his *Psychologie du Peintre*) may not be followed with advantage, in the study of psychopathy and normal psychology respectively. One may at least venture to affirm that there will

not be much progress in an adequate psychology of æsthetics without many such special psychological analyses.

For the rest the author's psychology is mixed up to any extent with physiology:—brain-energy becomes 'transmuted into' ideas, memory 'is a property' of nerve-cell and fibre, brain 'recognises, conceives, and judges';—his handling of statistics is quite elementary (pp. 34–38), and, whereas he is justly severe against the narrow horizon to be attained from the standpoint of a merely literary culture, and utters an eloquent *apologia scientiae* against literary reactionaries, his own criticism of art and manners is too much in that medical spirit (strongly dashed with philistinism) which sees safe and sane progress only in the 'mean,' average, man (or woman). It is true that he does not identify genius with a species of morbidly abnormal organism, but in a book of popular criticism it might have been wise to have made this discrimination more emphatic and less incidental. His forecast of the absolute decline of art and poetry as an inevitable concomitant of the intellectual maturity of the race is not without interest.

*Law in a Free State.* By WORDSWORTH DONISTHORPE, Barrister-at-Law. London: Macmillan & Co., 1895. Pp. 312.

It is not until p. 60 that Mr Donisthorpe clearly sets forth the design of the present work, *viz.* to "imbue the hearts of our own countrymen with the doctrine of individualism in such wise that it may some time be said of England, 'Behold a free country': it is to this end that individualists are working." "The Empire of the Individual," says our author (p. 18), "consists of all those moral or 'natural' rights which have not been taken away for the general good, and all those civil rights which have been conferred upon him (the individual) by the State in exchange for the rights of which he has been deprived."

During the last century the social doctrinaires of Western Europe strenuously maintained that liberty, fraternity and equality were complementary and coefficient elements of an ideal democracy. Lately, however, it seems to have dawned on some of our philosophers that liberty and equality are incompatible factors in a stable popular State; either liberty or equality must be surrendered, and the question is which of the two, in the struggle for existence, is most fitted to survive. If the issue depended upon Mr Donisthorpe we should have no doubt as to the result. In the work before us he presents in a very lucid and coherent style a formidable array of reasons in favour of the probability that civilized human communities will ultimately sacrifice the hope of equality to the love of liberty. Mr Donisthorpe commences his task by a survey of the functions of the State prevalent at the present day in this country, in other countries, and in past times. In chap. II. he enters on the thorny path of definition. One thing he tells us which we think is not generally apprehended, *viz.* that Anarchism is not pure individualism or isolated Egoism, but a "voluntary combination" (p. 70). Mr Donisthorpe does not believe in *a priori* principles as guides either for individual conduct or State policy. The question to be answered is, "What are the limits of group action in relation to its units?" (p. 72). And the rest of the book is devoted to an attempt to find *axiomata media* by which the solution of this problem may be effected. We find a great deal of old ground traversed, old difficulties encountered, and old methods rejected. Like Thrasymachus, Mr Donisthorpe decides that "Expediency has a meaning," but that "Justice has no meaning at all" (p. 113). Expediency must then be the canon by which the limit of State interference should be guided. Chap. IX., however, is a lamentable but extremely diverting confession of

the inadequacy of this criterion. To sum up, therefore, Mr Donisthorpe's contention. If State control is a condition of social existence there must be some measure of its extent, unless we are to admit absolute slavery. But Justice and Expediency are the only two possible criteria of individual or governmental action. Now Justice, Mr Donisthorpe considers, is a meaningless abstraction, a mere symbol of the unknown and unknowable. Expediency, although a sound test of personal conduct, is found to have no objective validity. State control, then, is an illusory principle for the regulation of the social machine. We are therefore compelled to admit the doctrine of *laissez-faire*, as the goal of social development. State socialism may be provisional and transitional during the present imperfect stage of human evolution. But the tendency of human nature and the teaching of history alike point to individualism as the only possible stable mode of social existence.

T. W. Levin.

*Friedrich Eduard Beneke: the Man and his Philosophy.* By Francis Burke Brandt, Ph. D., sometime University Fellow in Philosophy in Columbia College. New York: Macmillan & Co., 1895. Pp. vi., 167.

Dr Brandt's little book is the first serious attempt to give an exposition and criticism of the Psychology and Philosophy of Beneke in English. We congratulate him on his success. His reproduction of doctrine is lucid, accurate, and well arranged. It is also extremely sympathetic. The inner development of Beneke's thought is exhibited in such a way that the reader realises not merely that Beneke held certain views but also why he felt himself inevitably driven to hold them. After a short but interesting biographical sketch there follows a presentation of Beneke's psychological system. The four fundamental processes are very carefully treated, and emphasis is laid on the organic unity of the soul as constituted by the original interconnexion of the "primary powers." The detailed treatment of feeling and volition is, however, left by Dr Brandt to "other investigators" on the plea that he has not space for it in the present work. We hope that he will take up the subject himself on some future occasion. Beneke's distinction of the various kinds and grades of consciousness and unconsciousness is well and clearly given. The exposition of the *Metaphysics* as an applied psychology is short but satisfactory. The *Logic*, *Ethics* and *Pædagogy* are not treated. A good bibliography is given at the close of the work.

*The Diseases of Personality.* By T. Ribot. Authorised trans., 2nd ed. Open Court Publishing Co., Chicago: 1895. Pp. viii. 163.

That the revision of the English translation of M. Ribot's monograph has not been wholly successful from the stylistic point of view is shown by the first sentence of the Introduction, which runs as follows: "By 'person' in psychological language we understand generally the individual, as clearly conscious of itself, and acting accordingly: it is the highest form of individuality." But the translation appears to be quite accurate, if not always elegant.

*Obligation morale et idéalisme.* Par G. Lefèvre. Paris: Félix Alcan, 1894. Pp. 154.

The writer does not pretend to adduce new proofs of idealism or of moral obligation; his purpose is to awaken or justify in his reader's mind faith in two truths which for himself are unquestionable. These two truths are:

(1) that morality necessarily implies idealism, (2) that idealism necessarily implies morality.

The former he endeavours to demonstrate by showing that forms of moral theory which rest on any but the idealist basis reduce morality to an illusion. From the empirical (or materialist) point of view we cannot decide between the morality of pleasure and that of interest, or between altruism and egoism. Morality becomes an affair of fallible 'moral sense' or of æsthetic taste—a question for artists. Moral obligation, strictly so called, vanishes altogether on reflection. Moral obligation and the distinction between good and evil must therefore be grounded not on experience but on an *a priori* principle, and this must be found *within*, not *without*, us. To assume two ultimately different orders, the one of thought, the other of things, would be as fatal to morality as sheer materialism. There is but an order of thought, from which that of things is derivative. Nature does not work out her own ends in us, else all action would in the long run be mechanical, not moral. No law imposed from without can be for us a moral law. We must give the law to ourselves. Even God must not dictate our Duty to us, unless indeed God and we are bound by common principles of morality. The law for us must be also a law for him. For example, if we are bound by our promises, he too must be bound by his promises. That the principle of duty may be found in ourselves, the will must be autonomous. Moral obligation must consist in the government of the will by itself; and the Good lies in acting so that the will has itself as its object, the Evil being the opposite of this. An action is good or bad in proportion as the will is or is not its own object when one acts. But autonomy demands that thought—the rational will—should be all-embracing: that nothing should exist *outside of thought* [*whose* thought?—a question to be asked throughout]. Hence idealism follows.

The second point Lefèvre tries to prove by the consideration that in the formal truths of logical predication, as well as in the real truth of existential propositions, lies the foundation of a universal order. This is also a moral order. Thought, which is Being, contains a principle of *authority*. In the order of truth, or reality, are three grades marked respectively by the expressions, I *can be*, I *become*, I *am*. The second grade is *superior* to the first, and the third is *supreme*. Being possesses supreme worth, and thought, in which being is 'incarnate,' is the final cause of all things. Between the stages of the metaphysical order are infinite gradations, having each a moral as well as a metaphysical side. Thus a scale of moral worth is established—a hierarchy of ends. Render nature more true by rendering it more intelligible: this is your moral action. It is an integrating activity of thought, and its negative—ignorance—is a disintegrating—and therefore immoral—influence. Ignorance leaves the world a chaotic 'something'—alien from thought—a thing-*per-se*, fatal to rational will. In discovering nature I discover myself in three ascending stages of reality and goodness: in sensation, in my empirical character, in thought or personality. These stages are not severally isolated. Sensation derives its reality from the empirical self, and this derives its reality from the personal self. All my judgments have the fundamental implication that nothing exists except for me [and even *in* me: but then what becomes of other persons, and of God? do they, too, exist *for* and *in* me, *i.e.* in *my* thought, only?]. The individual life is the expression of the life of thought, which integrates, or 'unifies,' it: and social life expresses and points to the unity of a highest life. From these relationships individual and social life derive their worth.

All that is partial, transitory, contingent, is relatively bad. Hence the profound immorality of egoism, which thought tends to overcome. Hence,

too, the formula of duty to our neighbours: that we should treat them as ourselves, effacing all notion of substantial difference between them and us. When I benefit others I benefit myself: when I sacrifice myself for others, I only part with what to me is inessential for the sake of what is to me essential. Thus, in so-called self-sacrifice, I maintain my truest self. All individual difference of persons and things is to be merged in the ultimate unity of thought. What bestows morality on each man is the unification of his conduct by the synthetic or organising power of thought: what justifies the existence of society is the unity of a divine thought in which its members are at one. Thus our true relationship to our fellow-men and the relationship of man to God are apparent: the right behaviour towards men, as all members of one spiritual body, is exhibited; and idealism has been shown to imply morality as its basis.

Let it not be supposed that, in establishing idealism by means of morality, and morality by means of idealism, we have moved in a logically vicious circle. To this charge we should indeed have been liable were the truth of idealism distinct from that of morality. But it is not so. Both are but aspects of one great principle—Thought.

The brilliancy and moral fervour of this little work only make us the more regret that its author has not been more explicit: (1) as to what he means by morality and moral obligation; (2) as to how we should conceive the mutual relationship of finite persons; (3) as to the relationship of finite personalities to God; (4) as to the *erkenntnistheoretic* view to be taken of so-called 'things'—in other words, as to what he means by *Idealism:* or by saying that 'all things exist in thought, and not outside it.' And when he menaces us, as he virtually does, with the alternative—either idealism or moral annihilation, we have to ask—what is the morality, or rather moral theory of his idealism? By his own exposition it merely comes to this, that the Will should always take itself for its object. But, without long special training, even Œdipus would fail to comprehend such a maxim, much more to carry it out in practice. In fact Lefèvre writes not for ordinary persons, but for rapturous idealists. His arguments are all tinged with declamation. Assuming idealism and morality, without adequate definition of either, and addressing those who do the same, he preaches to the converted: his work is an enthusiastic rhapsody, not a reasoned whole.

JOHN I. BEARE.

*La philosophie d'Ernest Renan.* Par RAOUL ALLIER, ancien élève de l'école normale supérieure, agrégé de philosophie. Paris: Félix Alcan, 1895. Pp. 181.

Two works have already appeared in France dealing with the personality of Renan; one by M. Gabriel Monod, the other by M. G. Séailles. The former is an ordinary memoir, the latter a psychological biography.

In the book before us M. Allier proposes to examine the manner in which Renan philosophised, that is to say, what was his conception of philosophy, "according to what method and in what spirit did he set himself to enquire about the nature and the destiny of man and the universe?" (p. 7). Renan received his early education in the Jansenist seminary of Saint-Sulpice; and M. Allier devotes the first 40 pages of this sketch to an attempt to trace the influence of his early training on his subsequent intellectual development. The story is much the same as that to which we are accustomed in the mental evolution of most independent thinkers: at first unquestioning submission to the dictates of teachers; then a critical spirit evoked by the discord of infallible authorities; finally a revolt

against all traditional dogma, religious, scientific or philosophic. Why, in short, asks M. Allier (p. 26), did Renan attack religions? Because they are nothing else but metaphysical survivals and must be criticized and estimated like other speculative systems. In an early work entitled *L'Avenir de la Science*, 1848–49, Renan, M. Allier thinks (p. 7), has impressed the most trustworthy indications of his intellectual tone and tendencies. The fascination for Renan of the natural sciences, physics and chemistry, seems mainly to have obliterated the respect for tradition and authority which the training of Saint-Sulpice had fostered. Henceforth for Renan all religion must be sought in the scripture of nature. In chap. II. M. Allier gives us from *L'Avenir de la Science* Renan's view of the character of philosophy :—philosophy is the universal as distinguished from the special element in all human knowledge; or the "*tête commune*" as Renan expresses it, the ganglionic centre at which all the rays of knowledge are focussed (p. 42). Philosophy is contrasted with science; the latter is purely of the objective, while philosophy is a mere reflection of individual subjectivity. Science is generated by facts, philosophy is the offspring of philology (p. 44). M. Allier cites largely from this early work of Renan, which seems at best the somewhat crude performance of an emancipated schoolboy; although containing sentiments subsequently echoed widely in this country by our own literary scientists. In chaps. III. and IV. M. Allier enters more closely into the metaphysical and moral doctrines of Renan, quoting extracts from his more mature work, *Dialogues et fragments philosophiques* (1863).

Renan was undoubtedly the great evangelist of the gospel of humanity. Man is the God of nature. The absolute of justice and of reason is only manifested in humanity. Regarded apart from humanity the absolute is but an abstraction; looked at in humanity it is a reality. M. Allier thinks that Renan derived this identification of God, nature and human reason from his early acquaintance with the writings of Reid. The *Common Sense* of humanity was the theodicy which replaced the ancient metaphysic. "Voici le sens commun—installé en théodicée à la place de la raison métaphysique" (p. 71). Renan is strongly convinced that all history and all experience disproves the presence of any supernatural agency. On the other hand, he is equally positive that the march of events betrays a definite goal and tendency. The perfection of humanity is to be the final outcome of a long but not eternal progression (p. 86). One cannot deduce with any degree of certainty whether M. Allier is portraying Renan in a sympathetic or in a hostile spirit. If in the former, Renan might wish to be saved from his friends;—if in the latter, M. Allier seems to belong to that class of critics who are willing to wound and yet afraid to strike.

T. W. LEVIN.

*L'année psychologique.* Publiée par MM. H. BEAUNIS et A. BINET, avec la coopération de MM. TH. RIBOT et VICTOR HENRI. Première année, 1894. Paris: F. Alcan, 1895. Pp. vii. 599.

Comprises original articles by A. Binet and V. Henri on "Memory for Words" and on "Memory for Phrases"; by A. Binet and J. Passy on the "Psychology of Dramatic Authors"; by A. Binet and F. de Curel on the psychology of M. de Curel's own mode of dramatic composition; by Th. Flournoy on "The Influence of the Environment on Ideation," and on "Weight Illusions"; and by E. B. Delabarre on "Psychological Laboratories in America." Then follows a very extensive review of the literature of 1894 bearing on Psychology and on the Physiology of the Nervous System. A full bibliography brings the volume to a close. Full notice will follow.

*Kants Erkenntnistheorie und seine Stellung zur Metaphysik: eine Einführung in das Studium von Kants Kritik der reinen Vernunft.* Von Dr Max Apel. Berlin: Mayer & Müller, 1895. London: Williams & Norgate. Pp. 147.

This is a work which purports to be an introduction to the *Critique of Pure Reason*, but would, in fact, be intelligible only to those who are already quite familiar with the latter, and with a good deal more of German philosophy besides. For such persons however it has a marked value, and will well repay their study. The introductory part states and discusses the questions which disturb the *naïveté* of common sense, and force thinking men towards the critical endeavour to ascertain the true relation between "Vorstellung," or presentation, and its object. On the determination of this relation the fate of "Erkenntnistheorie" rests. In the course of his first chapter Apel formulates some views as to the function of the concept 'thing-in-itself' which claim more than passing notice. 'If,' he says, 'I know nothing except my thoughts or representations, have I any objective knowledge? What are *things?* Even the thing-*per-se* is only a conception of my own. My experience is but a fleeting succession of shadowy forms; am I myself more than this? *Self*-consciousness furnishes the πού στώ—the point by which I can fix the succession, and determine the order of experience. Thus my fixed point is *within*, not *without*, me.' Now, a distinction must be made between "Vorstellung" as a psychical fact, and the same as possessing logical content. Take, for example, a circle. Its "Vorstellung" as psychical fact is not circular; I can make no geometrical inferences from it. But logically considered I can infer from it all the properties of a circle. When I so consider it, I mentally designate, or *mean*, not the "Vorstellung" as psychical affection, but a something 'objectively' (*sic*) existing, a 'thing-in-itself.' In fact thing-in-itself is but a concise expression of the finite nature of our thinking. Our thinking cannot bestow *Dasein* upon its objects. Such truth as it can reach consists in the correspondence between it and the *thing-per-se*. This mental designation—this reference of our presentations to objects not merely existing *for us*, but pretending to independent existence, has its origin and basis in the Self, which, as real being, is identity of being and knowing, and transcends the opposition between the act of mental reference, and that to which the reference is made. Fichte rejected the thing-in-itself as self-contradictory. But the contradiction which he had in mind is not logical. The thing-in-itself is not *in* me, but *for* me. We only *aim at* the thing-per-se in our thinking; we cannot reach it. Its conception is that of an 'object in general' towards which our thinking must point if it is to possess objective or scientific value: if general knowledge is to be possible. This being so, our thinking has but relative truth, or adequacy to the relation of subject and object, thinking and being. This relativity, though important for Erkenntnistheorie, has no logical import, and is therefore no ground of scepticism. As to the function of the concept thing-in-itself, Apel criticises Volkelt's position in a trenchant and convincing manner. Proceeding to deal directly with the *Critique of Pure Reason*, Apel answers Schopenhauer's charge against this work, *viz.* that it is disfigured throughout by a confusion between thinking and intuition, Spontaneity and Receptivity. Receptivity (says Apel) is not purely passive for Kant: it involves two elements (*a*) susceptibility on subject's part of affection by object, (*b*) response on subject's part to such affection (which response is, however, never called spontaneity). Intuition is *both* sensuous *and* intellectual; not, as Kant says, 'sensuous, *and not* intellectual' (where by 'intellectual' he means *spontaneous*). Distinguish *spontaneous* from *intel-*

*lectual*, and Schopenhauer's criticism falls to the ground. Discussing Kant's doctrine of Space and Time, Apel asks—why must supersensuous intuition be also super-spatial and super-temporal? Space and Time are indeed formal conditions of sensuous intuition, but is this any reason why they may not be also formal conditions of noümena? Kant's opposition between intuition and understanding, as concepts, is no sufficient warrant for his denial that space and time can be valid forms of an *intuitus intellectualium*. Opposed as they are, they are still "Vorstellungen" in us, and they condition the possibility of synthetic judgments *a priori*. On this point Apel lays a good deal of stress. He carefully examines Kant's doctrine of inner sense. Kant's attitude to the problems of "Erkenntnis-theorie" is governed by his opposition between Understanding as Spontaneity or determinant, and inner sense, as Receptivity or determinable. He speaks of self-knowledge in very uncertain language: sometimes as if we could really know ourselves; sometimes as if this were impossible for us, except as phenomena. As to Kant's view of Apperception and its relation to inner sense, Apel differs sharply from Cohen. The latter thinks Kant meant that the simple consciousness of self—bare apperception—is possible only by reference to something else—by reference to the manifold of inner sense which it combines; that it *consists*, in short, in this combining activity: against this Apel quotes several passages of the *Critique*. [In this controversy Apel seems to contend for a *temporal* priority of the 'Ich,' which would of course be erroneous and un-Kantian.] Apel gives a lucid and apparently satisfactory explanation of what Kant means in the well-known passage of the *Prolegomena* where he distinguishes 'judgments of perception' from 'judgments of experience.' It is impossible for us here to do much more than refer to several interesting and able discussions in Dr Apel's work. But we should like to call attention to (*a*) his remarks on Kant's doubtful attitude towards the thing-per-se and therefore towards metaphysics, which for him was little more than the science (real or pretended) of things-per-se; (*b*) his criticism of Lange, who adopts the view, expressed by Kant himself and from Kant's standpoint unavoidable, that metaphysical thinking, if better than waste of time, must be classed among the exercises of the poetical imagination (a view which, says Apel, is false, and the result of a false standpoint); (*c*) his criticism of Kant's doctrine of Self, which is neither an intuition nor a concept, but bare Vorstellung, without permanence or reality or any determinate predicates, to which no categories can be applied, notwithstanding the part it is made to play in the Transcendental Deduction; (*d*) his examination of Kant's doctrine of Freedom, in which this same self is conceived in causal relation to the empirical character which it is said to determine. We have noticed a tendency in Apel to use the words 'objective' and 'ideal' as equivalent to 'existing independently of our thought' and 'unreal' respectively—a usage not likely to meet with the approval of Kant's followers.

JOHN I. BEARE.

*Die Physiologie des Geruchs.* Von Dr H. ZWAARDEMAKER. Leipzig: Wm. Engelmann, 1895. Pp. vi. 324.

Dr Zwaardemaker has here given a comprehensive account of what is known of the physiology of smell, and has incorporated in this account much original work, especially on the methods of exact investigation of olfactory sensations. After a chapter on the physical properties of olfactory stimuli, he considers fully the mechanism of smell. He criticises the work of Weber and Aronsohn on the question whether odorous particles finally affect the olfactory cells in a gaseous or liquid form, and regards the

experiments of the latter observer as inconclusive, owing to the difficulty of proving that the liquid completely fills the olfactory cavities. He describes olfactory fields, one corresponding to each nostril, analogous to the fields of vision. A large part of the book is taken up with the account of his apparatus and methods for the measurement of smell. Among interesting results which he has obtained by these methods are some on the compensation or mixture of smells. That two smells may to a great extent mask each other is matter of common knowledge, and by means of a modification of his olfactometer the author can regulate the respective intensities of two smells in such a way that they may completely neutralise each other. He has satisfied himself that this compensation is physiological and is not due to chemical action external to the olfactory membrane. There are short sections on fatigue, Weber's law, and the reaction time to olfactory stimuli, but these subjects are treated in a very fragmentary manner, and this is the least satisfactory part of the book.

The most interesting chapters are on the chemical relations of smell and on specific energy. In the former he has developed further the ideas of Ramsay and Haycraft on the relation of molecular weight to smell, but unfortunately seems not to know the work of the former author. On the ground of this relation he comes to the conclusion that the objective cause of smell is intramolecular movement in the odorous particles. On the question of specific energy, the author brings forward his results on compensation, and on the ground of these and of recorded cases of absence of the sense of smell for special substances, he infers the existence of a limited number of elementary smells analogous to the primary colours. He goes so far as to assign to these elementary sensations different parts of the olfactory sensory surface.

The book is a useful one; the most serious criticism to which it is open is that the author has been too free in framing theories, often, as he himself acknowledges, on scanty evidence, and has not waited till he has been able to confirm or refute these theories by the more exact observations which his own methods have made possible.

W. H. R. R.

*Die Urteilsfunction. Eine psychologische und erkenntniskritische Untersuchung.* Von Wilhelm Jerusalem. Wien und Leipzig: Wilhelm Braumüller, 1895. Pp. 169.

This is an extraordinarily interesting book, both as to style and substance. The bulk of it consists of a psychological investigation of Judgment—the cognitive function; this investigation is partly analytic, partly genetic, partly what the author calls *biological—i.e.*, having reference to the preservation of the individual and the race. There is also a section devoted to an historico-critical review of theories of Judgment, ancient and modern—a detailed consideration of the relation of Judgment and Belief to Truth—and a discussion of the Epistemological significance of Judgment.

The author's view is, that in Judgment a given content is moulded, articulated, and objectified, by means of the category of Force (or Will) and Manifestation. This view is supported by a wealth of acute observation and ingenious reasoning, and is made the basis and justification of a complete (though very slightly sketched) metaphysical theory. The account of the relation between Thought and Language, and of the influence of Speech on the development of thought, is of especial interest. Review will follow.

---

RECEIVED also :—

J. M. Baldwin, *Mental Development in the Child and the Race*, New York, Macmillan & Co., 1895, pp. xvi, 496.

E. W. Scripture, *Thinking, Feeling, Doing*, Chautauqua Century Press, Meadville, Pa., 1895, pp. xii, 304.

J. H. Hyslop, *The Elements of Ethics*, New York, W. Blackwood & Sons, 1895, pp. vii, 470.

S. J. Hunter, *Outlines of Dogmatic Theology*, London, Longmans, Green & Co., 1895, 2 vols., pp. 518 and 587.

W. R. Scott, *History of Ancient Philosophy*, London, Elliot Stock, 1894, pp. 88.

H. M. and E. Felkin, *An Introduction to Herbart's Science and Practice of Education*, London, Swan Sonnenschein & Co., 1895, pp. xii, 193.

A. Subrahmanyam, *A Synopsis of Aristotle's Philosophy*, Madras, Srinivasa, Varadachari & Co., 1895, pp. vi, 256.

H. H. Donaldson, *The Growth of the Brain*, London, Walter Scott, 1895, pp. 365.

H. M. Stanley, *Studies in the Evolutionary Psychology of Feeling*, London, Swan Sonnenschein & Co., 1895, pp. vi, 390.

R. Falckenberg, *History of Modern Philosophy* (Translated by A. C. Armstrong), London, George Bell and Sons, 1895, pp. ix, 633.

A. B. Thompson, *The Unity of Fichte's Doctrine of Knowledge* (Radcliffe College Monographs, No. 7), Boston, U.S.A., Ginn & Co., 1895.

T. Whittaker, *Essays and Notices*, London, T. Fisher Unwin, 1895, pp. viii, 370.

T. B. Hyslop, *Mental Physiology*, London, J. & A. Churchill, 1895, pp. viii, 539.

F. Boas, *Chinook Texts* (Smithsonian Institution, Bureau of Ethnology), Washington, Government Printing-office, 1894, pp. 278.

J. Mooney, *The Siouan Tribes of the East* (Smithsonian Institution, Bureau of Ethnology), Washington, Government Printing-office, 1894, pp. 92.

G. Fowke, *Archeologic Investigations in James and Potomac Valleys* (Smithsonian Institution, Bureau of Ethnology), 1894, pp. 73.

R. Garofalo, *La superstition socialiste* (Traduit de l'Italien par A. Dietrich), Paris, Félix Alcan, 1895, pp. xvi, 294.

P. Duproix, *Kant et Fichte*, Genève, Georg & Cie., 1895, pp. 237.

M. Benedikt, *Die Seelenkunde des Mensohen*, London, Williams & Norgate, 1895, pp. viii, 372.

W. Haacke, *Die Schöpfung des Menschen und seiner Ideale*, London, Williams & Norgate, pp. 484.

C. Ufer, *Ueber Sinnestypen und verwandte Erscheinungen*, Langensalza, H. Beyer & Söhne, 1895, pp. 29.

E. Adickes, *Kant-Studien*, Kiel & Leipzig, Lipsius & Tischer, 1895, pp. 185.

Gio. Sante Felici, *Le Dottrine Filosofico-Religiose di Tommaso Campanella*, Lanciano, Rocco Carabba, 1895, London, Williams & Norgate, pp. xxxii, 279.

## VIII.—PHILOSOPHICAL PERIODICALS.

The Philosophical Review. Vol. iv., No. 4. **J. Watson.** 'The Absolute and the Time-process.' [Opens with a criticism of Bradley and McTaggart. The Absolute must be manifested in the time-process, unless we are to regard the time-process as an illusion. But if the conception of the Absolute as self-complete apart from the time-process is self-contradictory, there is yet the difficulty that a world in process does not seem to be self-complete. This is met by the view that "ultimately the world and the whole temporal process of the finite presupposes (*sic!*) a single principle which is self-determining and which manifests itself in the temporal process." The nature of the principle is shown by a consideration of the nature of knowable reality: the Absolute must be self-distinguishing and yet self-relating, a perfect unity of subject and object.] **E. Albee.** 'The Ethical System of Richard Cumberland.' II. [Cumberland's doctrine of the good. The jural aspect of his system. Summary and appreciation.—Maintains the excellence of the previous paper.] **W. A. Hammond.** 'Hylozoism. A Chapter in the Early History of Science.' [The Ionians are important as marking a transition period, and their ideas are therefore especially interesting to the student of philosophic origins. Sketch of the concrete development of their thought.] **W. W. Carlile.** 'Some points in the Theory of Inference.' ["The most advanced and difficult part (of Logic) is the investigation of the nature of that sort of reasoning which is so simple and rapid that it tends to become organic." Special consideration of geometrical reasoning. We have to reconcile the proposition that the truths of geometry are truths of idea with the other proposition that they are truths of the outside world. The fact is that "the hypotheses in regard to our own activity which are the subject of Euclid's demonstrations enter very largely into the constitution of what we call the outward world." The empirical school goes wrong simply in appealing to experience subsequent to the conception (of equality, *e.g.*) instead of to the experience which creates it. Mill's opinion that the notion of cause and effect does not come into play in geometry is, therefore, very far from the truth.] Reviews of books. Summaries of articles. Notices of new books. Notes.

The Philosophical Review. Supplement No. 1. June, 1895. **E. Adickes.** 'German Kantian Bibliography.' [Nos. 1361 to 1971. Fichte, Politz, Nicolai, Richter, etc.]

The Psychological Review. Vol. ii., No. 4. **C. A. Strong.** 'The Psychology of Pain.' ["Physical pain is not a compound of an indifferent sensation with a feeling of displeasure, but itself a (cutaneous) sensation which calls forth displeasure."] **W. R. Newbold.** 'Experimental Induction

of Automatic Processes.' [Experiments on the 'phantasm of the glass' or crystal-gazing. There is no need to assume a 'sub-conscious': the glass is simply an irritant to the highly organised visual mechanism. Automatic writing, in the same way, is in many cases a purely motor phenomenon, produced by the continuous application of an indeterminate stimulus to the highly organised writing mechanism. It is not necessarily evidence of performed sub-conscious systems of ideas.] **M. W. Calkins.** 'Wellesley College Psychological Studies.' (1) **C. C. Nevers.** 'Dr Jastrow on Community of Ideas of Men and Women.' [Uncompromising contradiction of Jastrow's results as published in the *New Review*, Dec., 1891.] (2) **M. B. Simmons.** 'Prevalence of Paramnesia.' [47 % in 1040 experimental cases.] **J. G. Hibben.** 'Sensory Stimulation by Attention.' [A child, supposed to be congenitally deaf, hears when the subject of conversation is 'interesting' to her. The peripheral conditions are apparently normal; the variation in power of hearing, therefore, is due to central causes, the concentration or distraction of the attention. Outline of a psychophysical explanation.] Shorter contributions: **E. W. Scripture.** 'Practical Computation of the Median.' [The median is a more trustworthy value than the arithmetical mean. Rules for its computation. Cf. the *Review*, Jan., 1894, and the *Yale Studies*, Vol. ii.] **E. W. Scripture.** 'The second year at the Yale Laboratory.' Discussions: **H. K. Wolfe.** 'The New Psychology in Undergraduate Work.' **G. S. F.** 'A Rejoinder.' [Reply to Dr Hodgson's rejoinder in the previous number of the *Review*.] **C. L. Franklin.** 'Shadows of Blood-vessels on the Retina.' [Discussion of Schapringer's argument against König's conclusion that the retinal layer sensitive to red rays is farther behind the blood-vessel than the layer sensitive to blue rays.] **G. T. Ladd.** 'A Communication.' [Reply to Armstrong's review of the *Philosophy of Mind*.] **H. Nichols.** 'A. Notice.' [Refers to the writer's criticism of the Harvard Study A., published in the *Phil. Rev.*] Psychological Literature. New Books. Notes.

American Catholic Quarterly Review. Vol. xx., No. 77. **E. A. Pace.** 'The Relations of Experimental Psychology.' (Second paper.) [An acute and readably written article: hardly of such general interest as its predecessor.]

Revue Philosophique. 20me année, No. 5. (Mai, 1895). **A. Fouillée.** 'Les abus de l'inconnaissable en morale.' [By the "unknowable in morals" is meant the freedom of the will regarded as consisting in a power of spontaneously originating action in a way inscrutable to our intelligence, because undetermined by definable conditions. M. Fouillée contends that such a doctrine leads to the destruction of morality.] **G. Milhaud.** 'Kant comme savant.' [The general conclusion is that Kant was a mere amateur in physical science. His scientific ideas in 1786, so far from being in advance of the time, were "prodigiously" behind it.] **Clémentitch de Engelmeyer.** 'Sur l'origine sensorielle des notions mécaniques.' [An interesting and suggestive attempt to refer that natural confusion between mechanical ideas such as those of energy and force, which seems like an "original sin" of human nature, to psychophysical conditions.] Notes et Discussions. Analyses et Comptes Rendus.

No. 6. (Juin, 1895.) **P. Janet.** 'J.-M. Charcot: son œuvre psychologique.' **M. Bernès.** 'La philosophie au lycée et à l'agrégation.' **R. de la Grasserie.** 'Du phénomène psychologique de l'hybridité linguistique et du bilinguisme.' Analyses et Comptes Rendus etc.

No. 7. (Juillet, 1895.) **H. Taine.** 'Sur les éléments derniers des choses.' [Previously unpublished fragments on the ultimate constitution

of matter.] **A. Binet.** 'La mesure des illusions visuelles chez les enfants.' [The method followed is in substance that of Knox. The illusion selected for measurement is that which has recently been discussed by Brentano, Lipps, and Auerbach in the *Zeitschrift für Psychologie* &c. Results are: (1) The illusion is stronger for small figures than for large. (2) Its magnitude depends on the order in which the lines are compared. (3) The total illusion is the product of two illusions which are unequal in degree. (4) Children are in general vaguely aware that there is an illusion. (5) The illusion is stronger in children of 9 years than in children of 12.] **G. Tarde.** 'Le transformisme social.' [A critical examination of M. G. de Greef's book on this subject.] Notes et Discussion: **V. Egger.** 'La durée apparente des rêves.' [Sceptical criticism of current stories of long dreams occupying a very short time.] **J. Le Lorrain** and **L. D.** also discuss this and kindred topics.

No. 8. (Août, 1895.) **F. Le Dantec.** 'Les phénomènes élémentaires de la vie.' **Bourdon.** 'Observations comparatives sur la reconnaissance, la discrimination, et l'association.' [A series of experiments.]

Revue de Métaphysique et de Morale. Troisième année, No. 4. Juillet, 1895. **J. Lagneau.** 'Quelques notes sur Spinoza.' [Spinoza, far from following Descartes, stands in marked contrast with him from the outset. Descartes began with doubt, of which there is not a trace in Spinoza. Spinoza's God is not transcendent, hence the charge of atheism, which no writer has less deserved. Lagneau asks—What would Spinoza have been without Descartes? How would Spinoza have regarded Kant? Answers to these questions are attempted. Spinoza's Cartesianism consists in the slightness of the part which imagination is allowed to play in his system. This system is indeed a *minimum* of metaphysic, as Judaism is a *minimum* of theology. For Spinoza perfection consists in knowing God, *i.e.* (*a*) in comprehending the necessity which governs the world, (*b*) in loving him (or *it*). Realismo-Puritanism, the idea of Matthew Arnold, is to be found in the *Ethica*. Commentators make the great mistake of considering only the speculative element of Spinoza's work, which is but an accessory of the whole. The true unity of Cartesianism is to be found in speculation and practice combined. This is emphasized in Spinoza, whose system is not a mere geometrical construction—a tissue of abstractions. Paragraphs follow on Spinoza's conception of the essence of soul and body, and their relation. Spinoza contrasts favourably with Kant. The former seems at first to establish fatalism; in reality he establishes freedom, through knowledge of Self and of God. Not the idea of Personality—the most disintegrating of all—but the idea of science raised to the Absolute, of a scientific religion, is the integrating moral force which alone can regenerate modern life. Spinoza was wrong in isolating imagination, as he has done, from understanding. He seems to separate God from the world of nature, because he takes too low a view of *modes*—the products of imagination. Not only is his theory of imagination faulty, but he is altogether wanting in a theory of perception and sensation. Besides there is an immoral feature in his doctrine, which, while containing the material of a moral life, makes no provision for moral obligation. But that element in Spinoza's thought which is non-moral, non-religious, is altogether due to the influence of the Cartesian mechanism. Here follows a careful study of Spinoza's proofs of the existence of God.] **P. Lacombe.** 'La Méthode en Histoire. Essai d'application à la Littérature.' **A. Spir.** 'Nouvelles esquisses de Philosophie critique' (*suite*),—II. 'Le sens commun, et la Philosophie';—III. 'Du rôle de l'Idéalisme en Philosophie.' [Part II. contains an effort at arbitration between Common Sense and

Philosophy. The former taxes the latter (in its idealist forms) with absurdity: in reality the former is itself absurd without being aware of it. Part III. contains an explanation and vindication of idealism of a certain sort; of what sort, the following sentences may indicate. "In our day the majority of men capable of reflection no longer believe in the substantiality of Self (du *moi*); no longer attribute to it an absolute character." As for material things: "if the testimony of consciousness to the substantiality of Self has ceased to pass for absolutely true, much more must the testimony of external perception to the substantiality of perceived objects be void of truth." Further: "to believe in the reality of matter is the death of philosophy." (Is it not somewhat arrogant of M. Spir, at this high level of speculation, to constitute himself spokesman for 'the majority of men capable of reflection'? Such boldness of assertion may guarantee his own assurance, but cannot be admitted by critical readers as a substitute for argument).] Études Critiques, &c.

Revue Néo-Scolastique. Deuxième année. No. 3. (Juillet, 1895.) **C. Van Overbergh.** 'Les Unions professionnelles.' **C. de la Vallée Poussin.** 'La cristallographie.' **J. Huys.** 'Le Hasard.' **S. De Ploige.** 'La théorie thomiste de la propriété.' (Suite et fin.) Mélanges &c.

Zeitschrift für Philosophie und philosophische Kritik. Neue Folge. Band cvi., Heft 2. **Dr Eugen Kühnemann.** 'Die Ethik des Deutschen Idealismus.' [The title refers to that theory of the moral life which was inspired by Kant. It is described as the basis of Protestantism: as the Ethics not of the preacher, but of the enlightened man. It endeavours to understand human life, and raises the question whether a scientific conception of this does not demand the assumption of a principle distinct from the laws of nature. To answer this question it proceeds on the broad ground of observation and fact, and never loses itself in cloud-land. It secures the idea of personal freedom consistently with natural law. It conceives man as an end in himself, and humanity as a community of free persons, of whom each has an absolute worth. Each person being an end in himself, humanity is the highest of all ends. The article gives a survey—from a thoroughly appreciative standpoint—of Kantian Ethics, contrasting it favourably with the evolutional moral theories with which we are familiar, *e.g.* in the writings of Mr Herbert Spencer.] **Goswin K. Uphues.** 'Rehmkes Allgemeine Psychologie.' [Rehmke makes Psychology a branch of philosophy, not of natural science. It is a pity that he has neglected the work of William James, while he has carefully studied the comparatively superficial writings of Höffding. The science of the universal is philosophy: psychology, as a special or departmental science, confines itself to what is 'psychically given' as its object, dealing first with the abstract *individuum*, or psychic moment, next with the concrete *individuum*, or psychic life. This object is not given to general intuition: each person has only a sample of it, and a sample distinct from that of his neighbour. Each has but his own particular psychic life for his object of study. Rehmke then presents a review of previous psychical conceptions—the materialist, spiritualist, neo-materialist (according to which the soul consists in cerebral processes, or in conscious processes which are modifications of cerebral substance) and Spinozistic, conceptions. Uphues agrees with Rehmke that the category of substance does not apply to Soul, and belongs only to physical science; but thinks Rehmke should have shown that the self, to which alone this category pretends to be applied, is not somewhat apart from the processes of consciousness. Differing from Rehmke, he thinks that denial of the conscious subject as independent of

these processes does not lead to materialism. Nor can Uphues grant that the presupposition of a separate conscious subject is the only way of avoiding the assumption of unconscious psychic processes, and of explaining the possibility of psychic changes. 'In the presentation of that Self' (says Uphues) 'which endures as long as it is combined with successive conscious processes, while its object—our consciousness—is ever losing some parts and gaining others, and therefore never present in its entirety —in this presentation of Self we have an adequate Unchangeable to which we may refer the changes, or alternating processes, of consciousness.' Uphues has some paragraphs after this discussing the 'Consciousness of the Thing,' 'the Interaction of Consciousness and the Thing,' 'the Unity of Soul and Body and that of Consciousness,' and finally on 'the Origin of the Soul.' 'Could we but regard the supreme Reality as including both Being and Becoming (or happening) we might then regard it as the producing cause of the world both of things and of souls' (an utterly illegitimate use of the causal concept).] **Lic. Anathon Aall.** 'Der Logos bei Heraklit: ein Beitrag zu den ideengeschichtlichen Studien.' [This is a very interesting article on an interesting subject which, for want of space, we can only mention.] **P. van Lind.** 'Immanuel Kant und Alexander von Humboldt.' (II. Artikel.) Recensionen &c.

PHILOSOPHISCHE STUDIEN. Bd. XI., Heft 2. **A. Kirschmann.** 'Der Metallglanz und die Parallaxe des indirecten Sehens.' [Metallic lustre is an unique phenomenon, as indefinable psychologically as the content 'red.' It is wholly independent of the absolute intensity, colour tone and saturation of the viewed surface, and of the duration, extension, form and spatial surroundings of stimulation. The surface must, however, be a plane. Lustre depends on the intensive alternation of partial-impressions under varying spatial relations. Since the objective arrangement of the light processes which give rise to it must be tridimensional, it must further and ultimately depend on the parallax of indirect vision.] **M. F. Washburn.** 'Ueber den Einfluss der Gesichtsassociationen auf die Raumwahrnehmungen der Haut.' [Visualisation explains many of the 'cutaneous' results of Weber, Volkmann, Camerer, Henri, Vierordt and Czermak. Experiments are given, which demonstrate the importance of the visual association in normal 'cutaneous' space judgments.] **T. Heller.** 'Studien zur Blinden-Psychologie.' I. [The tactual sensibility. Synthetic touch with the hands.] **G. F. Lipps.** 'Ueber die Grundlagen der Mathematik.' IV. [The logical development of the concept of number.]

Heft 3. **A. Thiéry.** 'Ueber geometrisch-optische Täuschungen.' I. [Illusions of direction: parallel lines cut by parallel transversals, parallels cut by convergent transversals, illusions with the transversals themselves.] **P. Mentz.** 'Die Wirkung akustischer Sinnesreize auf Puls und Atmung.' II. [Pleasantness and unpleasantness. Emotion.] **V. Henri and G. Tawney.** 'Ueber die Trugwahrnehmung zweier Punkte bei der Berührung eines Punktes der Haut.' [The phenomenon is dependent on physiological conditions, but may be modified by psychical processes, as knowledge and expectation.] **T. Heller.** 'Studien zur Blinden-Psychologie.' II. [Analytic touch with the hand. The development of tactual space. History of blind printing-texts. Reading of the blind text.—Touch with lips and tongue.]

ZEITSCHR. F. PSYCH. U. PHYSIOL. D. SINNESORGANE. Bd. IX., Heft 1. **F. C. Müller-Lyer.** 'Zur Lehre von den optischen Täuschungen. Ueber Kontrast und Konfluxion.' [Discussion of the explanations of the arrow-head and feather illusion, etc., offered by Laska, Brentano, Lipps, Wundt

and Delboeuf. Return to the author's original theory, in terms of contrast and confluxion.] **G. Wagner.** 'Die spontane Umwandlung der Nachbilder der Sonne in reguläre Sechsecke und Achtecke.' [Comparison with Purkinje's hexagonal shadow figures and König's hexagons in the field of vision of the closed eye. All these figures are due to an 'intrinsic retinal activity.' After-images are probably not simply exhaustion phenomena.] Besprechungen. [Martius on Külpe's *Grundriss*.] Litteraturbericht.

Heft 2. **J. von Kries.** 'Ueber die Funktion der Netzhautstäbchen.' [The cones constitute a trichromatic apparatus, functioning for a fairly high intensity of light, and capable of attaining to very high values in its sensation products. The rods constitute a colour-blind apparatus, capable of function at a much lower intensity of light, but probably furnishing no very intensive light sensations (black to white).] Litteraturbericht.

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. Band I. Heft 3. **Paul Natorp.** 'Grundlinien einer Theorie der Willensbildung' (continued). [Deals with the relation of concrete morality, which in itself is constituted by social conditions, to individuality in general ("Individualität überhaupt"). From this point of view a classification of the cardinal virtues is introduced. Inner truthfulness, moral strength, purity, and righteousness are defined and discussed in an interesting way.] **A. Meinong.** 'Ueber Werthaltung und Wert.' [In his *Untersuchungen zur Wert theorie* Meinong had made the strength of the sense of value the measure of actual value. He now notes that this mode of measurement fails us in the case of possessions to which we have become accustomed. He therefore proposes to introduce a second kind of measure based on the subjective estimate of the degree of loss which the removal of an object would occasion. The discussion is acute, thorough, and interesting.] **M. J. Monrad.** 'Ueber den psychologischen Ursprung der Poesie und Kunst.' [Develops the Aristotelian thesis that art is based on the imitative impulse.] **A. Vannerus.** 'Zur Kritik des Seelenbegriffs.' [Accepts the "actualism" of Wundt, but rejects his (supposed) doctrine of the flux of conscious states, which, according to Vannerus, leaves no room for the persistence of an identical element, and so fails to account for the unity of consciousness.]

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

SCARBOROUGH COLLEGE LIBRARY

B
1
M65
n.s.
v.4

Mind

NOT TO BE TAKEN FROM THE ROOM